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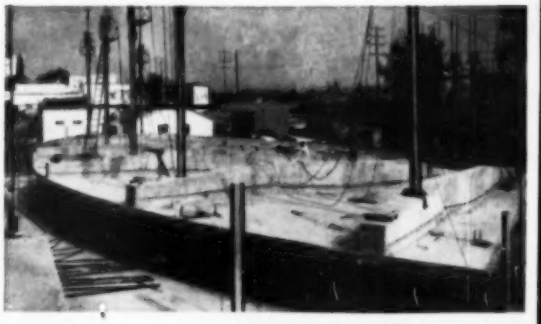

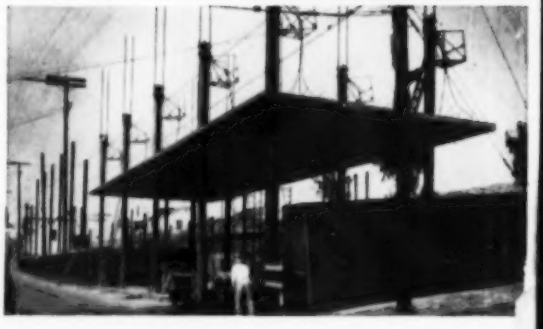

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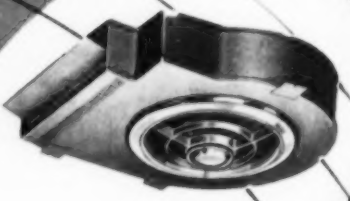

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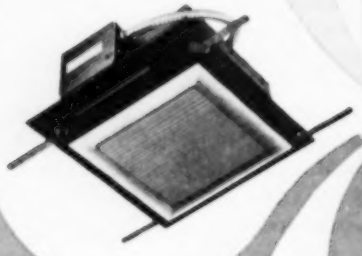

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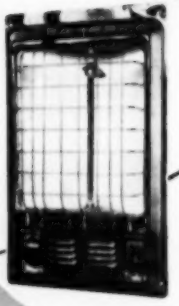

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pa newsletter

April 1953

At recent meeting of business-paper editors in Washington, at which many administration leaders were questioned on new federal programs, it became clear that little change in housing policies should be expected, aside from moves to reduce further number of public housing units authorized. New HHFA Administrator is Albert M. Cole (R., Kansas), former Congressman defeated in last election. Cole's thinking is known to be anti-public housing; how he will administer other aspects of present Housing Act (including urban redevelopment program) is still problematical.

Desires to balance budget, reduce public debt, and ultimately lower taxes are prime factors. As it becomes apparent how difficult reduction of foreign aid and military (defense) expenditures is, lopping off domestic expense items will be tackled, and government purchase of FHA and FNMA mortgages will be studied as reducible items. Housing industry groups crying for economy will not be enthusiastic about such moves, however.

Difficulties in achieving real economies are illustrated by National Association of Home Builders' "dynamic new program," urged by President Emanuel Spiegel. It calls for increase in interest rates on loans guaranteed by VA and "perhaps" on some FHA insured loans, but lower down-payments and extended mortgages. Spiegel says, "Congress should give FHA sufficient insurance authorization to provide a continuous revolving fund, thus avoiding the periodic exhaustion of FHA insurance funds."

It now seems doubtful that many, if any, defense construction projects will be cut from the budget. Few were O.K.'d originally that would not still be considered essential. Wastes that creep into actual construction are not things that can be pruned before projects are authorized. Postponement of some building through "stretch-out" of program over longer period does not appeal to Defense Secretary Wilson any more than it did to his predecessors.

Consumer price index (U.S. Dept. of Labor) at beginning of year dropped slightly from same period year before (total index stood at 113.9, with 100 as 1947-49). Housing costs — home ownership, rental and household items purchased — constituted 32% of average moderate-income urban family's expenditures, according to this survey. Index figure for these items at latest report was 116.4, a greater rise than the average of all costs. House furnishings had dropped slightly, rents had risen with partial decontrol, home maintenance and repair items had gone up a notch.

Philadelphia plans to better New York's Rockefeller Center. City fathers are receptive to plans proposed by Robert Dowling, New York real estate developer, through the Citizens' Council on City Planning. Idea is to develop "Penn Center" site owned by Pennsylvania R.R. through an authorized private corporation. Plans call for three immediate buildings and ultimately more than 500, in a redeveloped area planned around a 1000-foot landscaped esplanade.

PROGRESSIVE ARCHITECTURE published monthly by REINHOLD PUBLISHING CORPORATION, 330 West 42nd Street, New York 36, N. Y. Ralph W. Reinhold, Chairman of the Board; Philip H. Hubbard, President and Treasurer; Fred P. Peters, Vice President and Secretary; Gilbert E. Cochran, H. Burton Lowe, Merald F. Lue, William P. Winsor, Vice Presidents; Kathleen Starke, Assistant Treasurer. Executive and Editorial offices: 330 W. 42nd St., New York 36, N. Y. Subscriptions payable in advance. Subscription prices to those who, by title, are *architects, engineers, specification writers, designers, or draftsmen*, and to government departments, trade associations, members of the armed forces, college libraries, students, publishers, advertisers, prospective advertisers and their employees—$4.00 for one year, $6.00 for two years, $8.00 for three years. Above prices are applicable in U. S., U. S. Possessions and Canada. Latin America and Philippine Republic—$10.00 for one year, $16.00 for two years, $20.00 for three years. All other foreign subscriptions—$15.00 for one year, $25.00 for two years, $30.00 for three years. Single copy—$1.00. Printed by Publishers Printing Co., New York, N. Y. Copyright 1953, Reinhold Publishing Corp. Trade Mark Reg. All rights reserved. Re-entered as Second Class Matter September 21, 1951, at the Post Office at New York, N. Y., under the Act of March 3, 1879. Volume XXXIV, No. 4, April, 1953. In Art Index.

newsletter

In February, architects were pleased to see an ad of Minneapolis-Honeywell, first of a series, which featured "The Value of The Architect" in national consumer advertising. Appealing intelligently to businessmen clients, it spoke of the broadened concept of architecture, and described the modern architect as "the ideal captain to recruit and head a team of engineers and specialists. . ." No better assist could be found for the broadened public-relations program of the A.I.A. which is just about ready to be launched.

Certain A.I.A. contract forms may have to be revised if appeal upholds a decision of Appellate Division, 2nd Judicial Dept., N.Y., which recently decided that property-damage liability insurance does not cover a claim enforceable by arbitration. A subcontractor, agreeing to "hold harmless" the general contractor, insured himself against liability claims. A claim arising, the general contractor served a demand for arbitration and the insurance company refused to abide by the result, claiming that an adverse finding would not be "liability imposed by law." Decision will be appealed; look for Tomson's comment in IT'S THE LAW, at that time.

A.I.A. National Honor Awards Program includes this year all building types, with Industrial and Development Housing a separate category with a special award. Entries must be shipped before May 28th; fee of $15 is required for each building submitted. Information from Albert Heino, c/o The Octagon, Washington; mail entries to 204 Architecture Bldg., University of Seattle, Seattle 5, Wash.

Producers Council announces fourth annual Product Literature Competition, to be judged by an A.I.A. jury. Individuals, Chapters, or manufacturers and their agencies may submit material. Awards will be in four categories: 1) technical data on a class or type of product; 2) technical information on a proprietary product; 3) promotional material directed to architects; 4) space advertising directed to architects.

Although A.I.A. has officially branded Elmo K. Lathrop's "Fair Practice Proposals," which attempt to define spheres of architect, engineer, and contractor, as unacceptable, Lathrop reports continuing "overwhelming approval" from architects he has polled.

Robert S. Hutchins, of Moore & Hutchins, architects, has been appointed as Architect Member of New York City Art Commission.

Recent death of Lester Sanger, New York architect, has saddened his many friends. Sanger was an early contributor to The Specification Desk in Pencil Points back in the 20's; he trained many of today's specification writers; he wrote the specs for such buildings as Rockefeller Center; and he had the rare gift of co-ordinating work on a large project in the office, in the contract documents, and in the field.

City of Long Beach, L.I., N.Y., would like to hear from library architects, according to Lester Lewin, President of the Library Board. Bond issue for $350,000 for new library will be submitted to electorate in May.

McGill University in Montreal has completed a successful experiment in "demonstration training," devised to use three-dimensional techniques in studying and improving building methods, and attempting to integrate work of the construction industry. Howard T. Fisher, Chicago architect, administered the project, which was followed by a two-day conference on the subject in Montreal.

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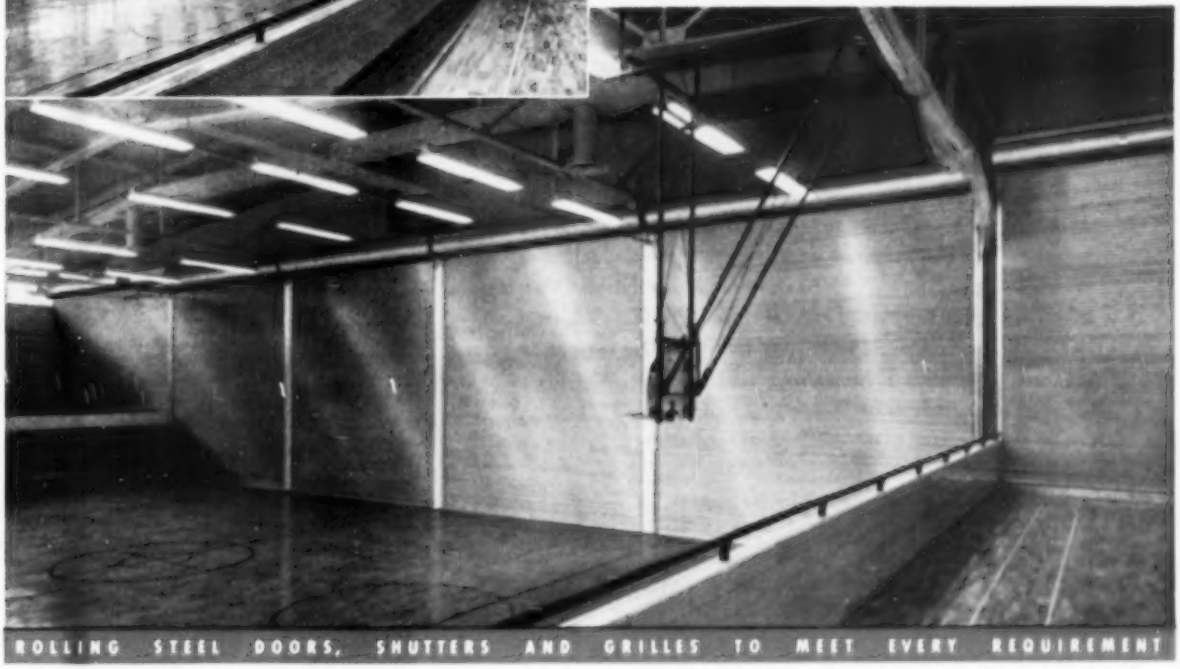

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PROGRESSIVE ARCHITECTURE

pa

April 1953

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interview with Vlassov sets off reader discussion

slip-cover approach

Dear Editor: The approach of Vlassov, compared to the contemporary architect's approach in this country, is so completely different that it seems almost senseless to start a fight with words. I find too few arguments of his which have bones enough to really start a valuable discussion. If he says that "the whole nation of people have the deciding role," I really do not know what he does mean by it in a country where everything which is done is ordered from above. Also I do not understand when he states that "Soviet architecture is designed to the needs and desires of the people." This is a commonplace; but, when I was in Leningrad myself in 1933 and when I later saw examples of Soviet architecture until very recently (*Kokusai-Kentiku*, No. 552), I saw very little consideration of the needs of the people. I have seen new housing blocks, six stories high with huge columns in front which take away the light from small windows, and one can imagine the experience of a pregnant woman living on the sixth story without an elevator.

The contemporary approach, which was started in the early days of the Soviets by men like Ginsberg and Vesnin, couldn't find roots because there was no industry whatsoever to provide them with the necessary means for up-to-date buildings. I saw, myself, structures built by the carpenter even to the last hinges and locks for the doors, since there was no metal or industrial metalware. So, at that time what they needed was rather ingenious foremen who were able to provide shelter with the most primitive means. That may have changed meanwhile considerably, but I cannot recognize in the examples of their architecture any reconciliation with the industrialization of building. If Vlassov talks at length about the love of the Russian architect for old Russian architecture and that of Greece, or the Gothic and even work of the 18th and 19th Centuries, I can only say that I have found that those who love old architecture most do not imitate it. They learn from it their own method of approach — the grammar, so to speak, but not the lingo of the other period. I cannot recognize the examples of contemporary Soviet architecture, as I have seen them in the Early 30's in Russia or later from illustrations, as being true architecture; they are applied archeology and show a slip-cover approach instead of trying to find an approach of their own which would mirror the deeply-changing conditions of our present period. WALTER GROPIUS

Cambridge, Mass.

no schism with west

Dear Editor: I believe the subject of relations between governments and architecture, people and architecture is very important just at the moment. Of course it has to be done on a higher level than Vlassov's argument. If it were, one would soon see that the schism is not between the so-called Soviet architecture and the so-called formalistic architecture of the West. Indeed, the taste of the Kremlin dictators and the government buildings erected in Washington during the last 20 years and what we have just experienced in the unhappy UNESCO Building affair in Paris, from the French government and the City of Paris, all are, if I am allowed to say so, brothers under the skin.

Isn't it curious that for months I have been thinking that it was time for a public speech on the problem of Architecture and Client?

I don't know whether it will be possible but I should come to the States for three weeks in March, for other reasons. If I do maybe it would not be a bad idea to give this speech in New York.

S. GIEDION

Zurich, Switzerland

cart before the horse

Dear Editor: Myself, the honored guest of the Architects' Convention, Moscow, 1937, I went over hoping to save the Soviet from the reaction from so-called Modern. But I encountered that thing of Jeanneret's (the Crow), utterly idiotic from every standpoint, and I found myself too late to do much good. The reaction to that confirmed ignorance had set in. The Russians were mighty nice to me, but they had seen little of my work and knew less of my philosophy. To them I was a name. The Soviet Architecture, in their work at the Paris and New York Fairs, was indebted to my work. But, they were on the run.

In the main, of course, Vlassov is right enough and if you will read "Organic Architecture looks at Modern Architecture" published by the *Architectural Record*, May, 1952, you will find my answer to Vlassov, et al. But of course like their ideology, they have the cart before the horse. You might send it on to him. (I mean the article.)

His stand is based not upon American Organic Architecture, about which he apparently knows nothing at all, but upon the European invasion of that architecture—imitations now a dime a dozen—in the West, Going East . . .

Just imagine (by looking at our own slate) how long the Soviets must work and wait to show anything worthy of modern materials, methods and men, or their ideas.

My heart aches for them and I can't help. FRANK LLOYD WRIGHT

Taliesin West

sense of community

Dear Editor: I read with a great deal of interest your article on Vlassov, the Soviet architect. (PROGRESSIVE ARCHITECTURE, *March, 1953*) I think it extremely interesting and have very little

(Continued on page 10)

p/a views

(Continued from page 9)

quarrel with anything he has said. It seems to me written with objective sensitivity. As you probably know I, in many ways, agree with the three points mentioned: that we have lost touch with the desires of the people, that our technology follows a preconceived esthetic, and we ignore examples of history.

Recently I read a very outstanding critique of T. S. Eliot, the poet, and I came across an idea which goes along in character with Vlassov's article. He said that a sense of community is essential to a mature and authoritative art, and that authority of the community is absolutely necessary to evaluate a new idea as it develops, otherwise the inventor merely does what he likes and conforms to no standards.

My own comment is that I think one of the reasons of the success of constructivism, as practiced by Gropius, Mies van der Rohe, and Le Corbusier, is that it affords a simple and readily understood system of authority; an order which one uses without much thought, and which may become, as I have often said, a bed of Procrustes on which human needs are stretched to beget flexibility.

I am not so sure that the phrase, "examples of history," is right; perhaps it would be much better to say, "the lessons of experience which the past has gained."

Good work in getting the article.

RALPH WALKER
New York, N. Y.

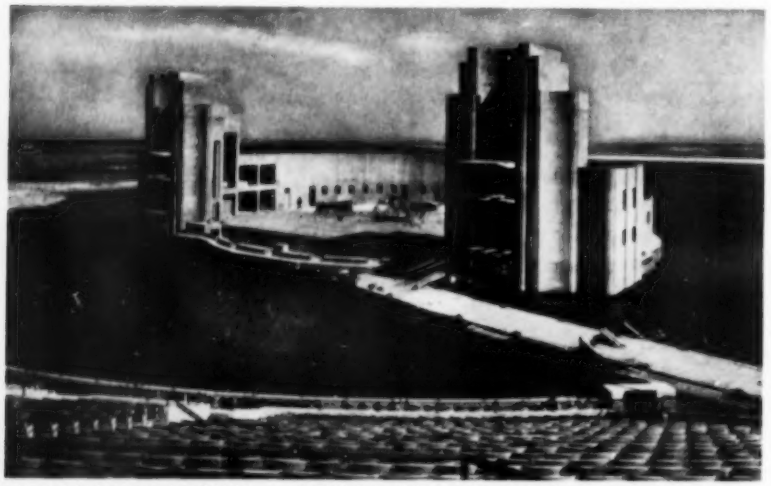
mutual understanding

Dear Editor: I agree with you that the statements given in Warsaw by Moscow's chief architect are worth discussing, and I shall try to give you my quick reactions.

My first one is that Vlassov's attempts to rationalize present-day Russian Architecture sound very much like our own efforts in the opposite direction. I mean that both East and West do intuitively what they like best, then they construct elaborate theories to explain it. But what saves us in the West is the fact that any trend creates a countertrend, and the free atmosphere of creative thinking in which this happens saves us from the possible absurdities of one group prevailing too long.

If we wish to be completely objective, we may say that Vlassov at times nibbles at the edge of truth; but we should also add that while it is easy for us to see through his foggy esthetic pronouncements, it does not appear that he understands what we are about. His theories are "old hat" to us. They were used in the recent past to comfort and protect us in our lack of creativeness, although we never pretended they were the worker's choice. Also the present-day dictators of fashion in Russia have not had the chance to see much of our contemporary architecture, other than what is superficial and transitory.

(Continued on page 12)



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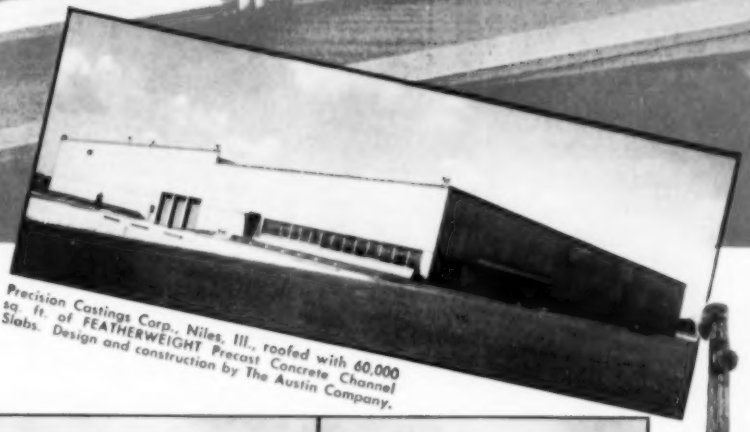

Precision Castings Corp., Niles, Ill., roofed with 60,000 sq. ft. of FEATHERWEIGHT Precast Concrete Channel Slabs. Design and construction by The Austin Company.

St. Luke's Parochial School, St. Paul, Minn., roofed with nailing concrete slabs. Associated Architects, Slifer & Cone and Toltz, King & Day, Inc. Contractor, Hagstrom Construction Co., all of St. Paul.

WHEN you decide on a permanent roof deck consider its *life expectancy*. There's no argument about the lasting qualities of structural concrete, and that's what Federal *Featherweight* Roof Slabs are made of. You roof just once with Federal . . . for the life of the building . . . with never a dollar for maintenance. No, never a dollar *ever* for painting, repairs or replacements.

Your Federal Roof is entirely unaffected by disintegrating factors such as extreme temperatures, water or steam, smoke, fumes or rust. It is safe against fire. Haydite aggregate is incorporated in the concrete slabs to reduce weight without sacrificing strength. This is important for economy in the supporting steel superstructure.

Featherweight slabs are laid fast in any weather. Channel slabs are immediately ready for the composition covering. With *Featherweight* NAILING Concrete Slabs the integrated nailing surface provides a secure base for slate, tile, copper or other ornamental covering. Either type of Federal Roof Deck assures a lifetime of dependable, non-maintenance protection.

Public Service Company of Indiana. Storeroom, Electrical Building and Garage at Plainfield, Indiana, roofed with concrete channel slabs. Architects, Naess & Murphy, Chicago. Contractors, Gust K. Newberg Construction Co., Chicago.

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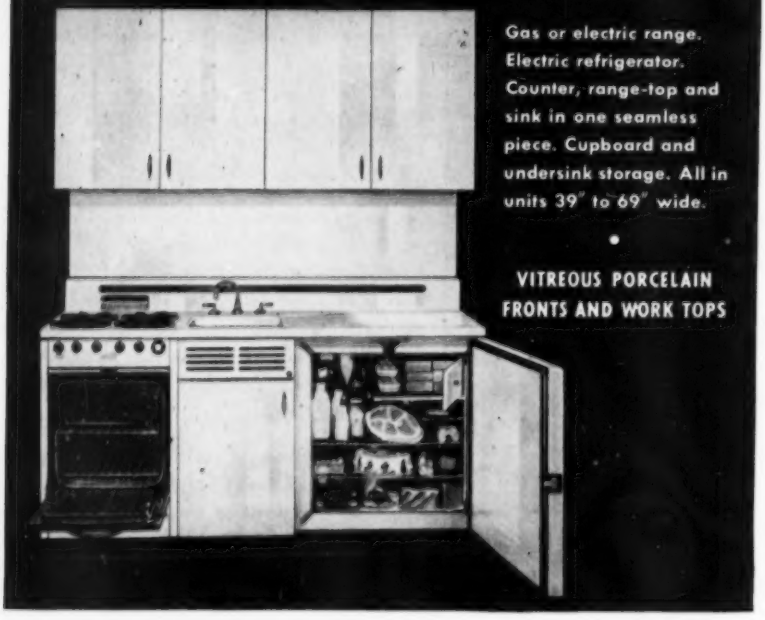
p/a views

(Continued from page 10)

Unfortunately, Corbu's unhappy experiment in Moscow in 1927 makes a good target, but it is as absurd to take his failure to face the limitations of his problem and the infatuation he always displays with abstract forms for their own sake, as the only contribution to Western thought in architecture, as it would be silly to deny the influence Corbu had in establishing new symbols for an age which was determined to replace many obsolete forms of the past, in order to make way for the promises of the future.

DWYER KITCHENS



Gas or electric range. Electric refrigerator. Counter, range-top and sink in one seamless piece. Cupboard and undersink storage. All in units 39" to 69" wide.

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This failure to understand us, of course, is due to the Kremlin policy of suppressing the means of communication with the West—indeed we should be tolerant and even sympathetic of the plight of Vlassov and his Russian colleagues if they fail to see the deep current which carries Western architecture forward, especially when we consider that some of us on this side of the Iron Curtain are somewhat confused.

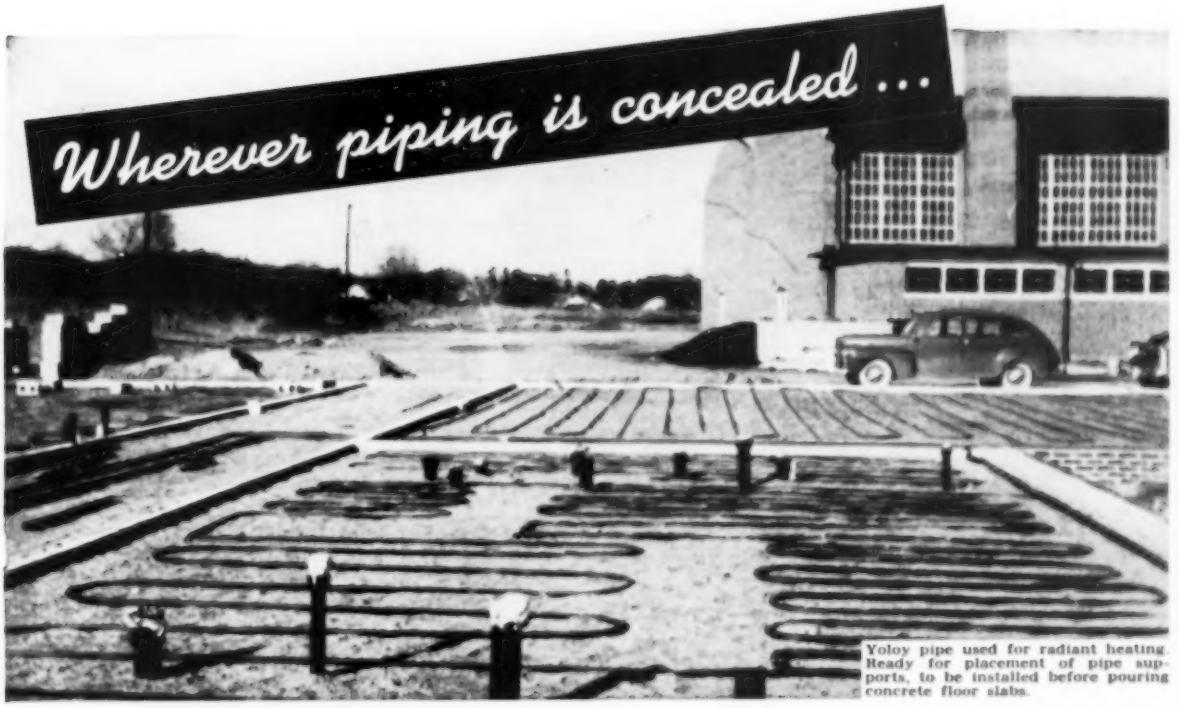
Certainly we cannot blame Vlassov completely if he accuses some of us of forcing preconceived esthetic formulas on our technology, or of doing acrobatic stunts with our fuctional programs. He may even be right when he says that we are not meeting all the sociological needs of our low-income groups; but by what we know of their efforts in this direction through the books of Mrs. Kirk, wife of the American Ambassador, and Lady Kelly, wife of the British Ambassador, we may draw some startling conclusions in our favor.

If proof is needed that Art and Architecture can develop and flourish only in a free climate of trial and error, we have only to look at the samples of their wedding cake type of architecture. Remember the Lenin palace? Now here is the Soviet-designed Palace of Culture in Warsaw—it has a familiar look indeed. But isn't it of the type we were producing for the city halls of our American cities not so many years ago? Isn't it also a perfect example of forcing preconceived forms onto functional needs, a sin Vlassov accuses us of committing in the name of technology? Furthermore, how is he going to reconcile his great love and admiration of the Greek temples in their play of light and shadows, as a motivation for Russian architecture, with the sociological needs of his simple working people? It seems to me that they are working themselves into the same blind alley from which we have just succeeded in backing out.

As for self-criticism, we may also find innumerable reasons to beat our breasts and confess our sins; but as we listen to the many voices from many heights, we are justified in hoping that we in the West shall eventually build for ourselves a physical environment worthy of free men, not a contrived stage setting for puppets.

PIETRO BELLUSCHI
Cambridge, Mass.

Wherever piping is concealed . . .



Yoloy pipe used for radiant heating. Ready for placement of pipe supports, to be installed before pouring concrete floor slabs.

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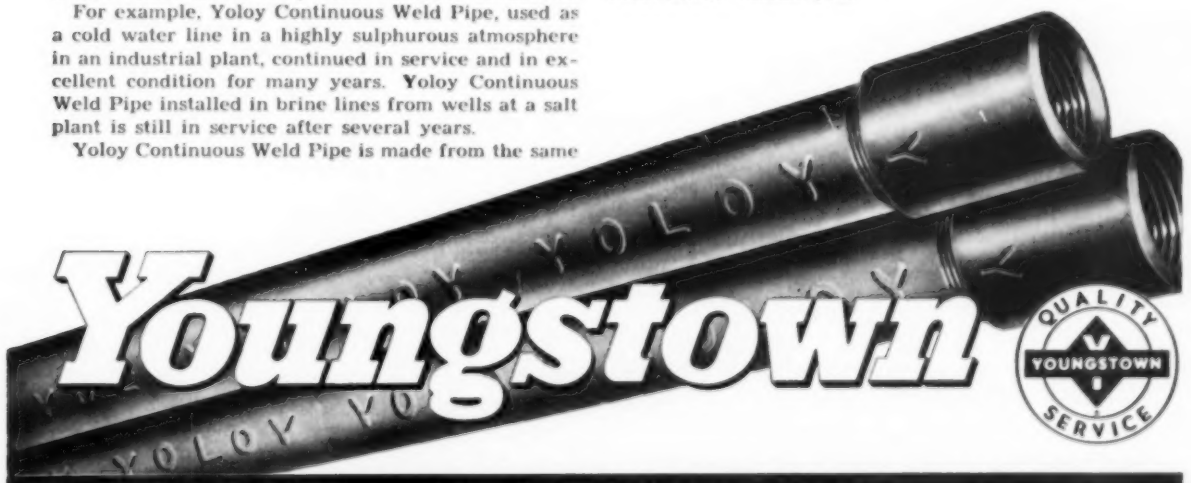
For example, Yoloy Continuous Weld Pipe, used as a cold water line in a highly sulphurous atmosphere in an industrial plant, continued in service and in excellent condition for many years. Yoloy Continuous Weld Pipe installed in brine lines from wells at a salt plant is still in service after several years.

Yoloy Continuous Weld Pipe is made from the same nickel-copper steel composition that has proved so successful in service in the oil, mining, railroad, chemical, trucking and other industries where resistance to corrosion and abrasion is of prime importance. This pipe is easy to thread and fabricate with standard pipe tools. It can be electric or gas welded readily. It has high strength and high resistance to abrasion, shock and vibration fatigue. For further information, write or phone the Youngstown District Sales Office nearest you.



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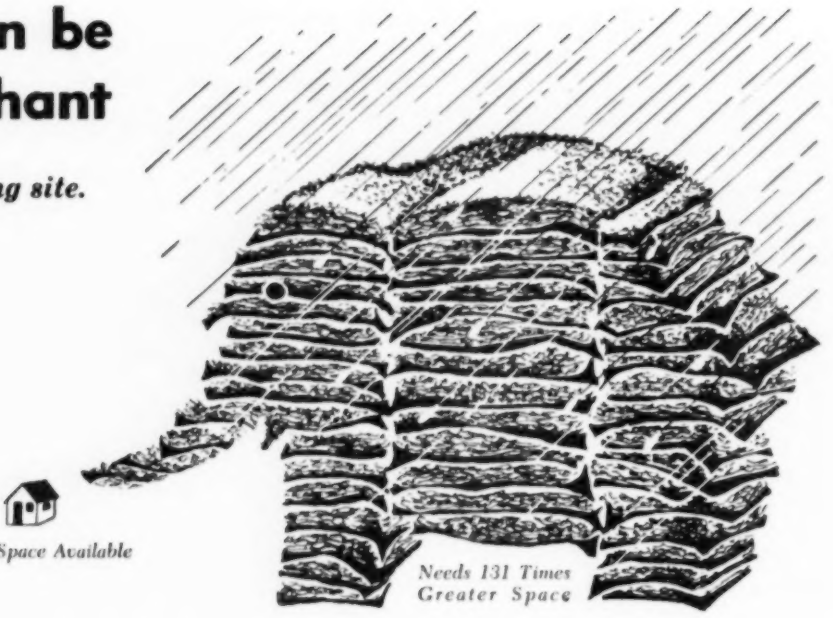
Insulation can be a White Elephant

It can clutter up a building site. And if it rains before the building's up . . . !



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Needs 131 Times Greater Space

STORAGE SPACE at building sites, even outdoors, is so scanty, that bulky ordinary insulations are often left exposed to the weather, even to rain, before and during installation. Soon they are sopping wet.

Pilferage and where to put other materials become pressing problems. Ordinary insulation, packaged, occupies 131 times as much cubic space as equivalent multiple aluminum. Two under-the-arm cartons of multiple accordion aluminum insulate the average dwelling (providing 2000 sq. ft.); can be toted to the job on a bus; offer no storage problem. They are easily stowed in a tool bin or in a car; 10,000 sq. ft. on the back seat; 5000 sq. ft. in the luggage compartment.

Moisture destroys insulation values. Water in the interstices of a material is an excellent heat conductor. Standard thermal factors for ordinary insulations refer only to a BONE-DRY condition. Excessive moisture causes peeling paint, crumbling plaster, rotting wood.

Excessive condensation is sometimes produced inside building wall and roof spaces if metallic vapor barriers are not used to prevent excessive passage of water vapor from the warm side of the ceiling or wall space to the colder surface, where it condenses.

With sufficient pressure differential, water vapor, a gas, will flow through any part of the surface of asphalt "vapor barriers." The surfaces of multiple accordion aluminum are impervious to water vapor. The insulation is practically non-condensation-forming, and will not absorb moisture.

The commercial form of multiple accordion aluminum is Infra Insulation, Types 6, 4 and 4 Jr. Thermal factors are given below. For a more detailed, but easily followed study of the problems of heat and vapor flow, refer to Schwartz's "Simplified Physics of Vapor and Thermal Insulation." Free copy on request.

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Up-Heat	**C.089, R 11.23**	**=**	**4 3/5" dry rockwool**
Wall-Heat	**C.073, R 13.69**	**=**	**5 5/8" dry rockwool**
Down-Heat	**C.044, R 22.72**	**=**	**9" dry rockwool**

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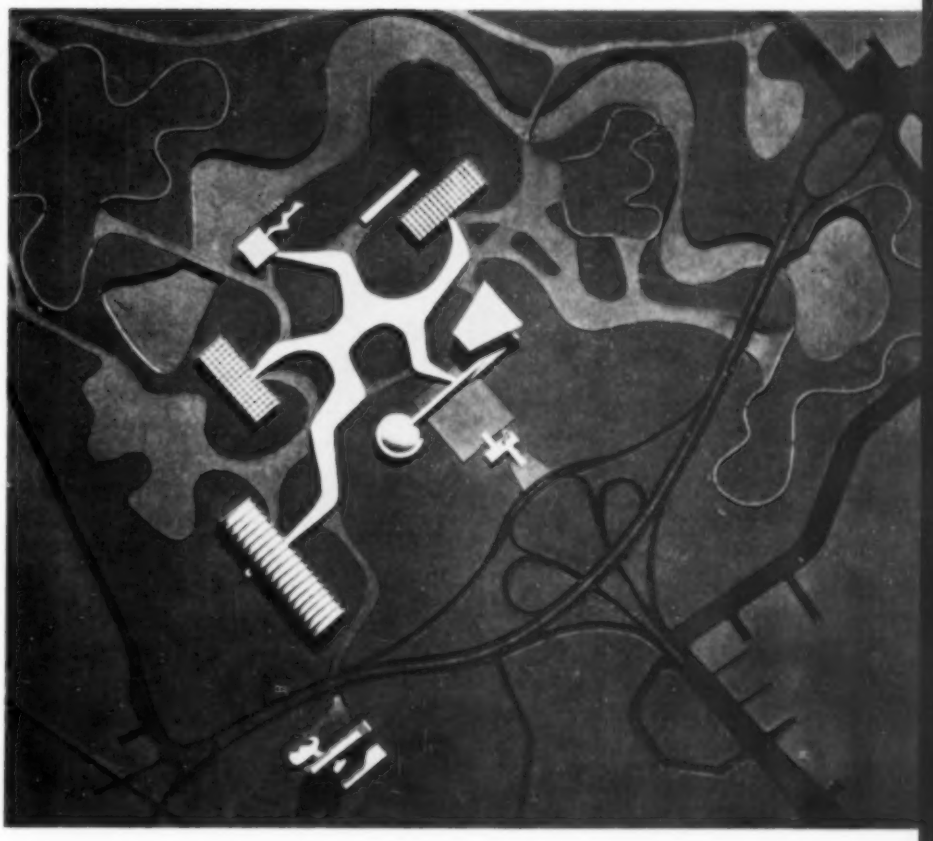
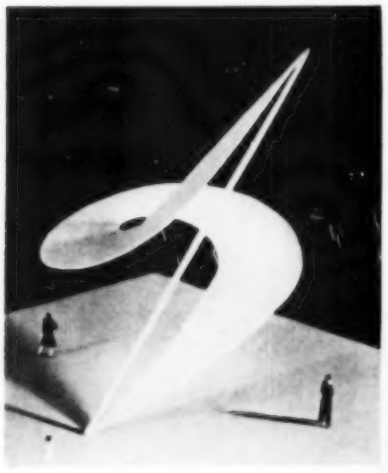
Design skills and structural daring of a panel of Brazilian architects—Oscar Neimeyer, Helio Uchoa Cavalcanti, Zenon Lotufo, Eduardo Kneese de Mello, with Gauss Estelita and Carlos Lemos collaborating—have been enlisted in the creation of exposition buildings for the approaching Fourth Centennial of São Paulo, Brazil. The large site *(right)* is being developed to serve, after the Exposition has concluded, as a park for the city. Certain of the structures, therefore, are intended as permanent buildings while others suggest the more ebullient character of display and playtime architecture.

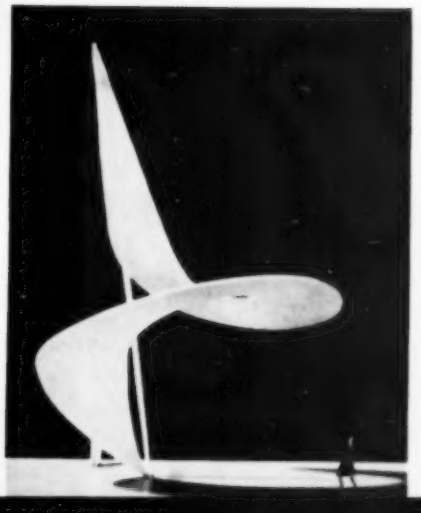
Circulation was a primary consideration of the site planners, so that Exposition visitors will be able to go directly to points that interest them. The shapes and external treatment of the buildings, reminiscent of contemporary industrial forms, are intended by the panel of architects to suggest the complexity of modern society served by architecture originating in harmonious stimuli.

Thus the Centennial Commission has found in the designs of the architectural panel "the perfect manifestation, the ideal language to communicate" the importance of São Paulo's technical and industrial development during four centuries.

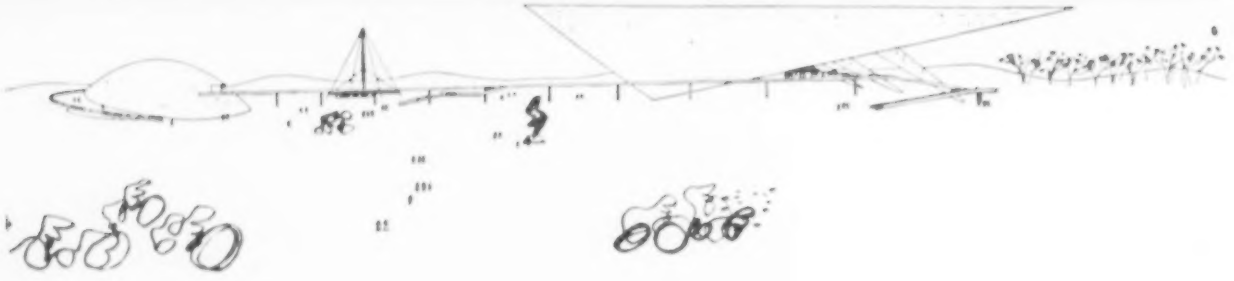


exposition buildings exemplifying technical advance

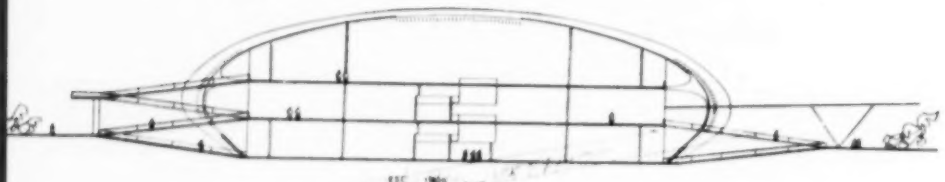


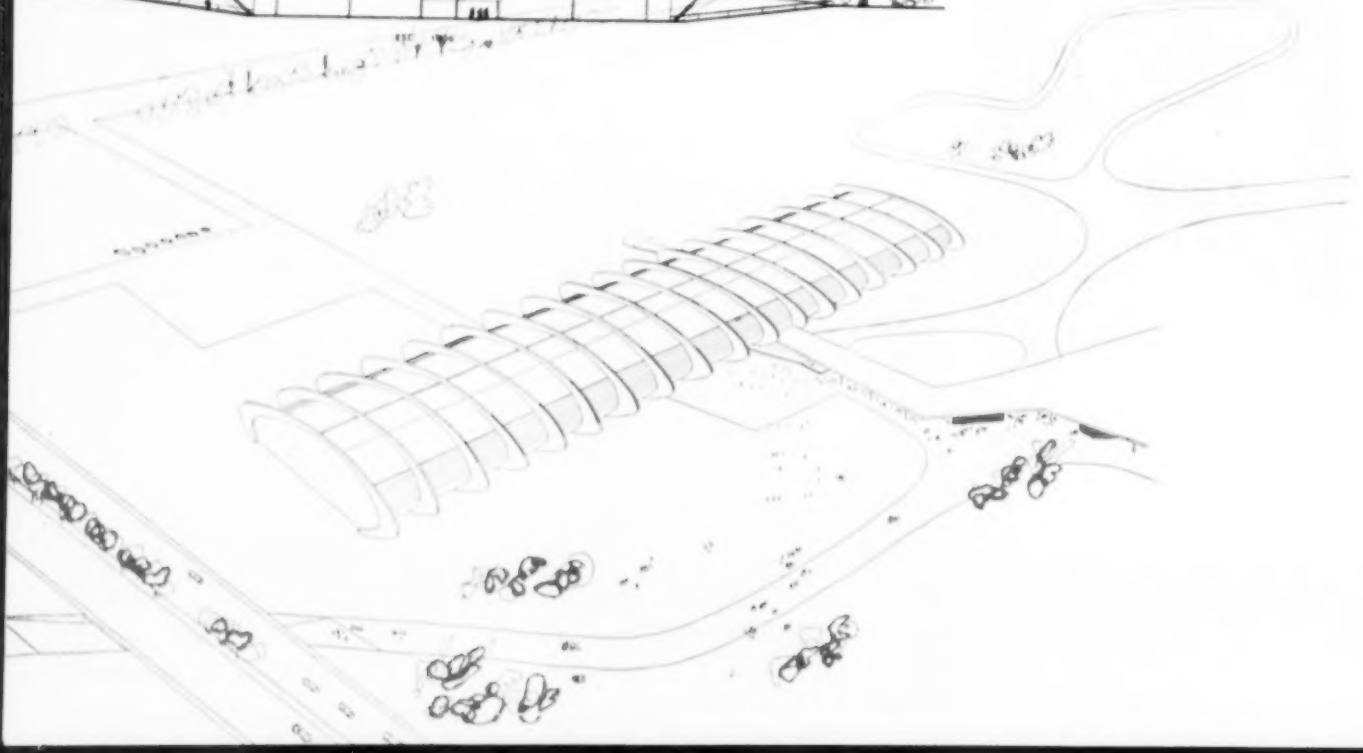


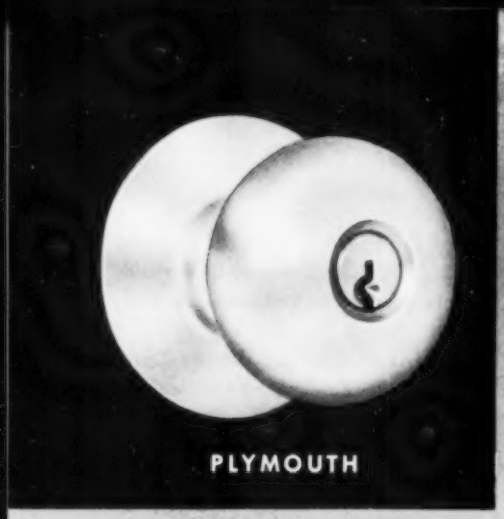
Two views of a model of a monument to the spiraling importance of São Paulo, intended to adorn the public park that will remain after the Fourth Centennial Exposition.



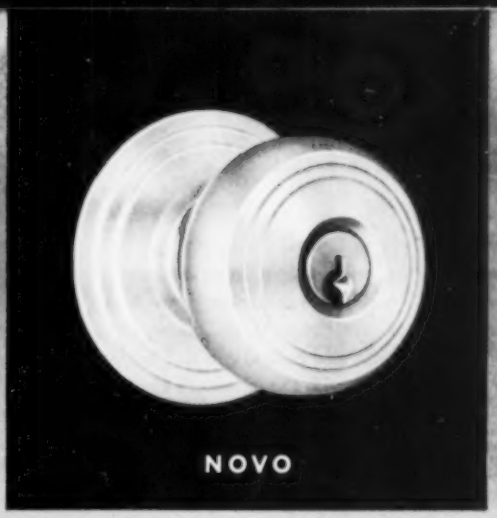
Expressive of the talented architects who are designing the São Paulo Exposition structures are these sketches of the Agricultural Building (top), *Planetarium and adjacent Auditorium* (above), *the projected Industrial Museum* (below), *and the Industrial Building* (bottom of page).





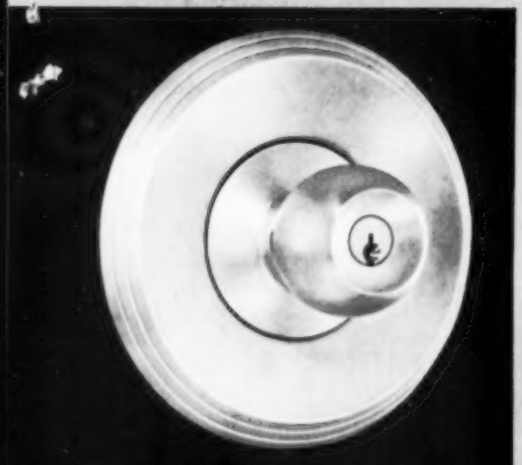


PLYMOUTH

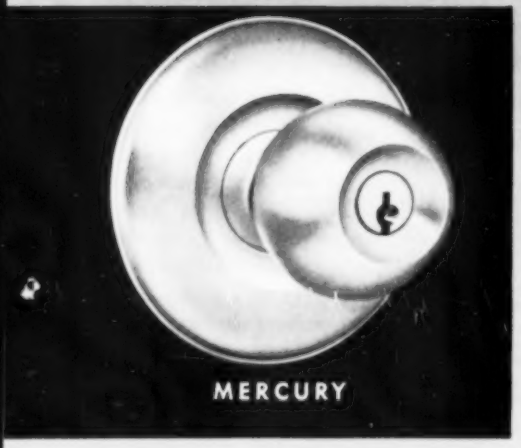


NOVO

SATURN



SATURN OVER RIVIERA



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victories and defeats of modern architecture

by Sibyl Moholy-Nagy

The Museum of Modern Art offered in February an exciting and comprehensive survey of architectural development in our century. The ground floor was dedicated to a survey of the STIJL group, and the third floor to an ambitious survey of U.S.A. postwar architecture. With greatness and simplicity, the Dutch founders of the STIJL group—van Doesburg, Oud, Rietveld—had brushed aside the accumulated heritage from Olympia to Garnier's opera in Paris. In an analytical test-tube, building was broken down to its fundamentals of mass, volume, structural materials, and optical effect. Proceeding from there with the innocence of the new-born, these elements were reconstructed according to the laws of function and ideology. In those old enough to remember, the STIJL show aroused nostalgia. How simple the equation between structural form and social progress had seemed in the mid-Twenties, how virile and manly its realization!

Twenty-five years later and two flights higher in the Museum the victories and defeats of this powerful beginning were summed up in all their complexity. That the victories should be more evident than the defeats was due to a superbly installed exhibition. The triumph of Modern Architecture is the triumph of Ezra Stoller and his colleagues. Architectural photography —from brilliant blow-ups to stereo-optic color shots in special viewers—served as a convincing expression of what the Museum leadership somewhat snobbishly called "the discovery and proclamation of excellence." Other ages produced great structural innovations and new materials. In daring and in social impact, the Roman concrete dome and the flying buttress hold their own beside re-enforced concrete and the skeleton frame.

The conscious inclusion of light and color, and the interaction of outer and inner space, are achievements of 20th Century architecture, and they were never more beautifully presented than in this exhibition. As one walked from project to project, protected from visual fatigue by separating lattice partitions, the emotional response to hue and reflection was much stronger than the appraisal of structure. It was a sort of primary joy that became more conscious and justified with the purpose of the buildings: dormitories, office buildings, schools, factories. Whatever its dubious results in other aspects, the "century of the common man" has at least made a beginning toward communal building as the worthiest object of good architecture. Only civic-minded Rome offers an anology. Between lay almost 2,000 years of public wasteland that now have come to an end.

It takes courage today to use the word artistic without an apologetic grin, but it is the artistic quality that provides the common denominator for buildings of such diverse ideology as Aalto's dormitory in Cambridge, and Barthelme's elementary school in Texas. The new structural and material elements have been used sculpturally and painterly, without impair-

(Continued on page 20)

This Laboratory Test, made on a standard, full-size Gate City Wood Awning Window, ***tells the story!***

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Equivalent wind velocity miles per hour	Air infiltration—cubic feet per minute per foot of overall sash crack perimeter
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10	.032
15	.067
20	.103
25	.140
30	.1755
35	.210
40	.244

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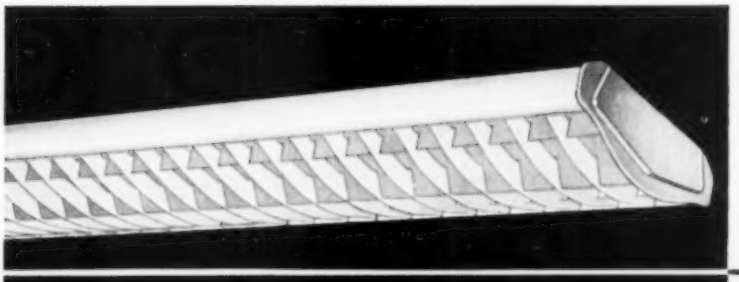
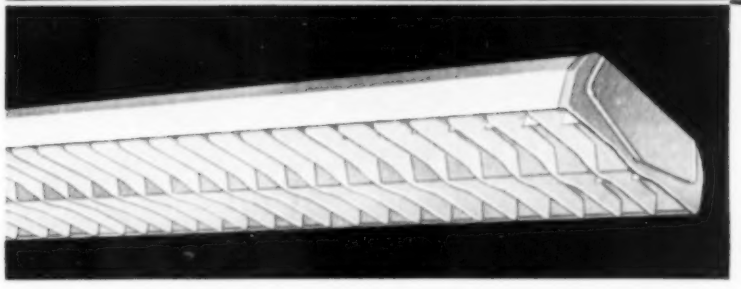


the "LODESTAR" luminaires
with translucent plastic sides

4-FOOT MODELS: Available in 2 or 4 lamp luminaires, choice of 40-watt medium bi-pin, 40-watt Instant-Start, 40-watt Rapid-Start, 38-watt Slimline.

8-FOOT MODELS: Available in 2 lamp 75-watt Slimline; 4 lamp or 8 lamp 75-watt Slimline, 40-watt medium bi-pin, 40-watt Instant-Start, 40-watt Rapid-Start or 38-watt Slimline.



the "ECONOMY" luminaires
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4-FOOT MODELS: Available in 2 or 4 lamp luminaires, choice of 40-watt medium bi-pin, 40-watt Instant-Start, 40-watt Rapid-Start, 38-watt Slimline.

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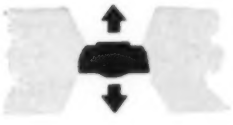
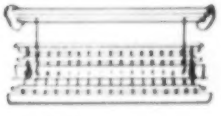
outstanding lighting features and maintenance advantages



These luminaires are of the "General Diffuse" type, approximately half the light goes up to be reflected from ceiling and upper walls to provide comfortable, glare-free, uniform lighting.

New Rapid-Start units offer an unusual advantage: "No starters to replace." Installation of Rapid-Start luminaires slashes maintenance cost by eliminating starter replacement expense.



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(Continued from page 18)

ing their architectural function. The battle between rational and emotional emphasis in architecture is over at last. Both elements coexist victoriously—grandly, one might say, in the Lever House, and unobtrusively, in Aeck's football stadium.

It was a particular merit of this exhibition that it prevented the eye from becoming saturated with monumentality. Interspersed between public buildings were private houses built since 1946. In an unfortunate and incomprehensible decision, 12 of the 19 examples presented are situated in California and the Southwest. The brilliant light, the grandeur of the landscape, and the mild climate—allowing transparent constructions in timber and glass—are great deceivers. They create a picture of American housebuilding that is as typical as Marilyn Monroe is of American womanhood. But in conjunction with the much more sober Connecticut structures (the vast Mid-West, it seems, still lives in teepees and jig-saw Gothic) there emerges the aspect of a truly regional home architecture. And this is the triumph of Frank Lloyd Wright as an American. When the Greek Revival proclaimed the independence of style from origin, the American house lost its identity, until one man undertook the gigantic task of giving the prairie, the mountainside, and the desert their due. Twitchell & Rudolph's weightless waterfront pavilion, Soriano's California house with continuous bays reflecting the long mountain range in the background, the sparseness of Schweikher & Elting's desert house in Arizona, and the delicate wood patterns of a northern woodland cottage by Marcel Breuer, prove the validity of indigenous building. They also prove a development that is historically interesting.

Public structures grow higher and more monumental by the year; the private house (commissioned by those who make their money in the gigantic towers) gets flatter and smaller at the same ratio until it almost crawls back into the earth, as does the precocious glass bubble by Soleri and Mills. The instinctual logic of the medieval builders who gave to the Universal Church universal proportions, while the human dwelling adhered to human measure, is here repeated. The conspicuous mansion is dead. The contrast between the limitless expansion of capital and technology on the one hand, and the rediscovery of the human module on the other, testifies to a new comprehension of the function of architecture.

These then are the evident victories, demonstrated in this exhibition: new materials and structural methods creatively transfigured; region and site given their just share; building purpose expressed in scale and visual impact; all of it pre-

(Continued on page 196)

WHY "HILLYARD" when choosing FLOOR TREATMENTS?
Because: Hillyard products are specialized for particular floors – you can depend on them to add safety and beauty underfoot in any new building you plan – any old building you remodel.
Because: Hillyard trained floor experts (Hillyard Maintaineers) act as your job captains (without charge) from construction stage to finished beauty.
Because: Hillyard offers complete A.I.A. specifications on every type of floor "free on request" to architects and their specification writers.
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FLOOR HILLYARD TREATMENTS
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biggest hotel built anywhere in 20 years

Architects and Engineers:
Holabird & Root & Burgee, Chicago, Ill.
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General Contractor: Robert E. McKee, Inc.

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Horn products in the new Statler Hotel, Los Angeles

Statler Service is famous. So is the long service of Horn Products . . . building materials for maintenance and construction used in nationally known structures throughout the United States for 55 years.

FERRO-FAX: A metallic floor hardener, incorporated into the cement floor toppings, for dense, wear-resistant, steel-like floor surfaces.

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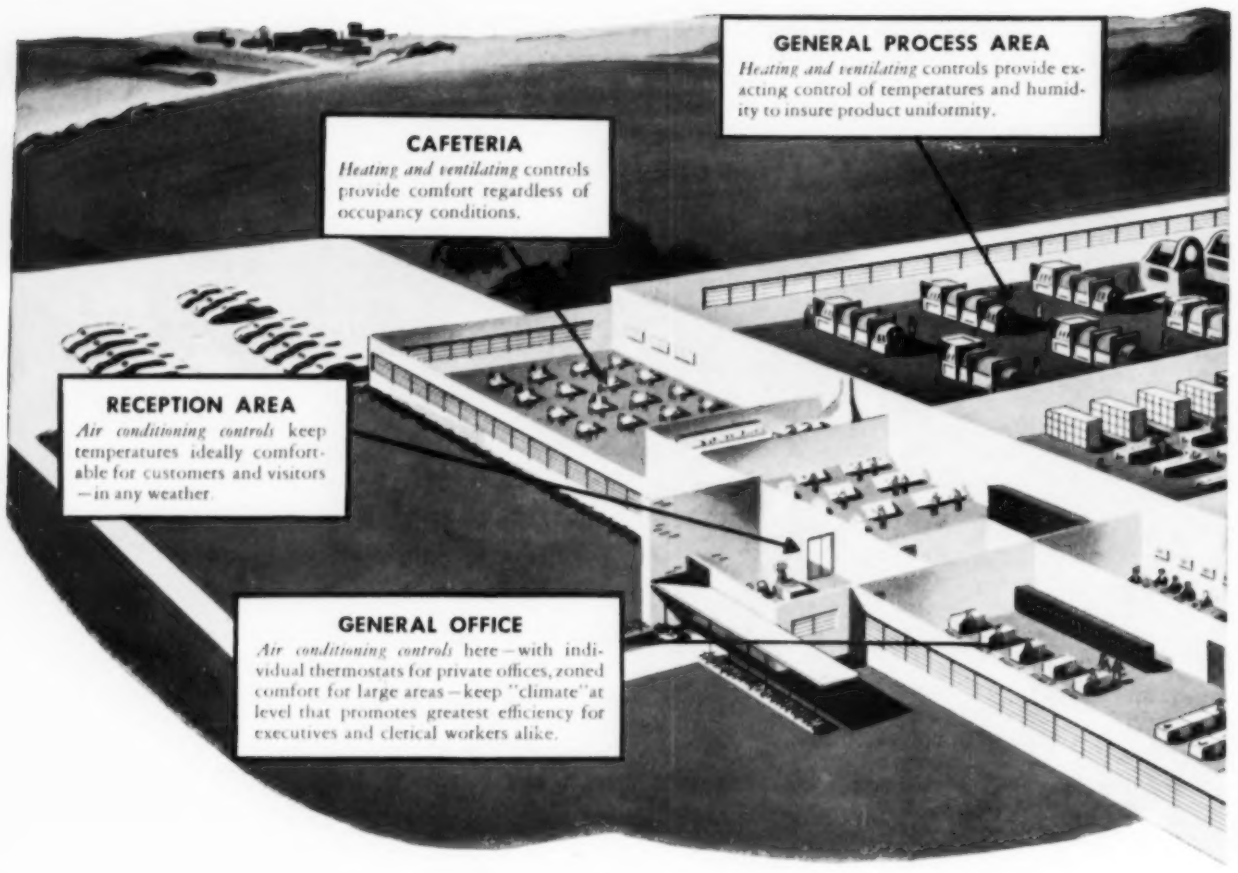

GENERAL PROCESS AREA
Heating and ventilating controls provide exacting control of temperatures and humidity to insure product uniformity.
CAFETERIA
Heating and ventilating controls provide comfort regardless of occupancy conditions.
RECEPTION AREA
Air conditioning controls keep temperatures ideally comfortable for customers and visitors —in any weather.
GENERAL OFFICE
Air conditioning controls here—with individual thermostats for private offices, zoned comfort for large areas—keep "climate" at level that promotes greatest efficiency for executives and clerical workers alike.

How Honeywell Customized Temperature Control Can Raise Industrial Efficiency

Take two of the most important factors in business today: employee work-output and product quality.

There's good evidence that on both counts the efficiency of a plant could be considerably improved by proper installation of Honeywell Controls.

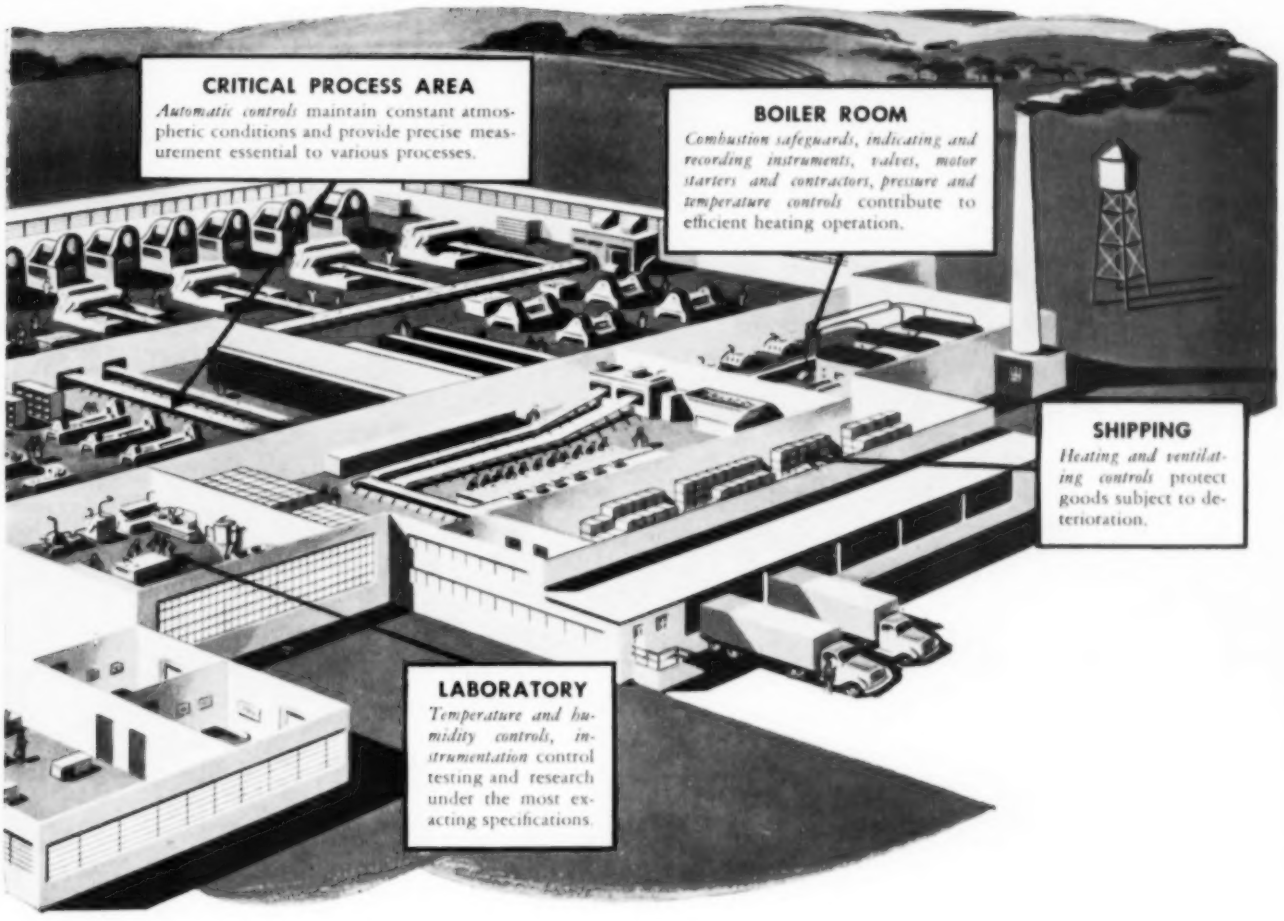
As for the amount of work employees do . . . scores of plants throughout the country have greatly boosted efficiency—by protecting workers' health, increasing their comfort, making them happier.

One of the primary ways this was done was through the use of Honeywell Customized Temperature Control installations in areas like those above. By compensating for such varying factors as weather, exposure, occupancy, internal heat sources and type of building construction, Honeywell Controls have greatly improved working conditions.

Or consider the realm of product quality . . .

Honeywell control installations in industrial centers have helped improve products, often have made possible a much greater degree of uniformity. These controls for temperature, humidity and process instrumentation are in daily use by industries as divergent as pickle packers and uranium processors, paper manufacturers and steel fabricators.

And in many cases, Honeywell Customized Control installations are saving businesses thousands of dollars yearly through more economical use of fuel.


CRITICAL PROCESS AREA
Automatic controls maintain constant atmospheric conditions and provide precise measurement essential to various processes.
BOILER ROOM
Combustion safeguards, indicating and recording instruments, valves, motor starters and contractors, pressure and temperature controls contribute to efficient heating operation.
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Heating and ventilating controls protect goods subject to deterioration.
LABORATORY
Temperature and humidity controls, instrumentation control testing and research under the most exacting specifications.

For Comfortable, Even Temperature in New or Existing Buildings—of any size—Use Honeywell Customized Temperature Control

Whether it's a factory, school, office, hospital, apartment, store, garage — or any size building — new or existing, Honeywell Customized Temperature Control can help meet your clients' heating, ventilating, air conditioning and industrial control problems.

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For full facts on Honeywell Customized Temperature Control, call your local Honeywell office. There are 104 across the nation. Or mail the coupon today.

MINNEAPOLIS
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First in Controls

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Gentlemen:

I'm interested in learning more about Honeywell Customized Temperature Control.

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Coursed Ashler variation with 4" & 8" units

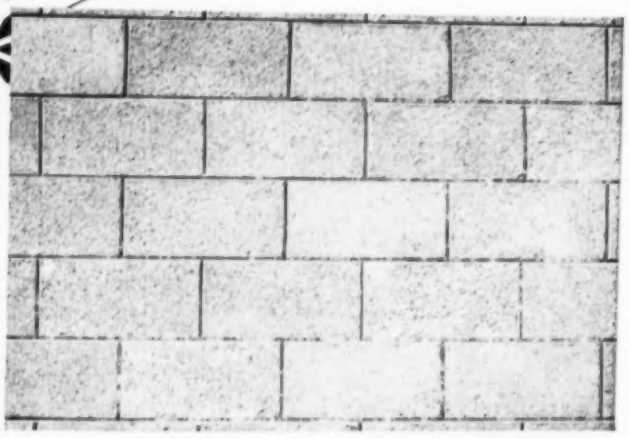
Horizontally stacked 8" x 16" units

4" x 16" and 8" x 16" courses

Basket-weave using 8" x 16" units

Theme and Variations

Tooled horizontal joints; verticals wiped out



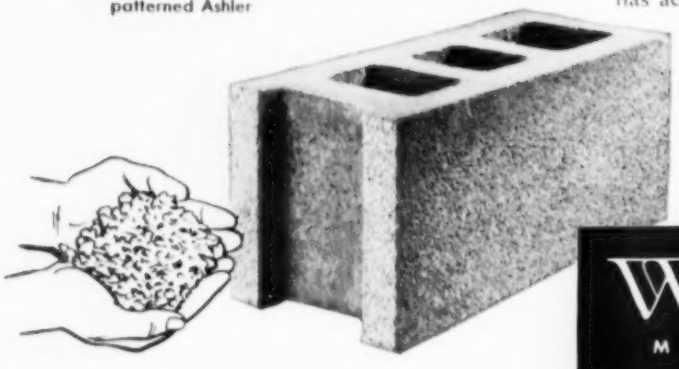
THE FAMILIAR THEME—8" x 16" FACE UNITS IN RUNNING BOND

Here 8" x 8" units are stacked

A very effective patterned Ashler

...with exposed WAYLITE Partitions and Bearing Walls

The vast musical literature of the world is limited to a maximum of 13 tones in any one octave . . . similarly there is a very wide range of harmonious effects to be obtained with Waylite masonry walls of any thickness . . . a few of the different handlings are shown here . . . they are achieved very simply. . . . Waylite masonry has adequate structural strength—superior thermal insulative qualities—and exposed Waylite interior walls need no acoustical treatment. The Waylite Co., 105 W. Madison Street, Chicago, or Box 30, Bethlehem, Pa.



WAYLITE

MASONRY UNITS

The exceptional resilience and rich appearance of Armstrong's Cork Tile make it an outstanding flooring choice wherever an atmosphere of quiet and dignity is desired. Extra strength and durability resulting from an exclusive dielectric process make lighter, less expensive gauges of Armstrong's Cork Tile practical for most needs.

Chapel
Oak Park Hospital, Oak Park, Illinois
Schmidt, Garden and Erikson, Architects

ARMSTRONG'S CORK TILE

ARMSTRONG CORK COMPANY • LANCASTER, PENNSYLVANIA

FARM BUREAU INSURANCE COMPANIES *Insure the efficiency*

Paramount objective of this entire layout: to make sure that the Companies keep on serving policy-holders with highest possible efficiency.

Farm Bureau Insurance Companies Building
Columbus, Ohio
Architects: **Benham, Richards & Armstrong**
Builders: **Haig M. Boyajohn & Associates**

Here, Mills ceiling-high walls, glazed cornice-high partitions and glazed railings form a group of attractive, dignified, semi-private offices. There is no waste when Mills Walls are rearranged. All parts may be used over and over again.

of their office space with

MILLS MOVABLE WALLS

● The Farm Bureau Insurance Companies use Space Control to make sure that their office space will *stay* efficient even though their space requirements are bound to change radically with continued growth and progress. They keep their space *adaptable* to changing needs with Mills Movable Metal Walls. Mills Movable Walls give you *Space Control*—enable you to rearrange your layouts readily whenever changes in needs occur. They are distinctively modern and dignified, incombustible, permanent in function and structural stability. They require no maintenance except occasional washing to keep them looking new and attractive. Yet they can be moved quickly, easily and at very low cost—sometimes in a matter of hours, overnight or during a week end—without interrupting normal business activities.

THE MILLS CO., 945 WAYSIDE RD., Cleveland 10, Ohio

In this layout effective use is made of Mills glazed railings in combination with glazed cornice-high office partitions. Wiring for light, phone and air conditioning controls is easily installed in raceways in base, cornice and panel connections.

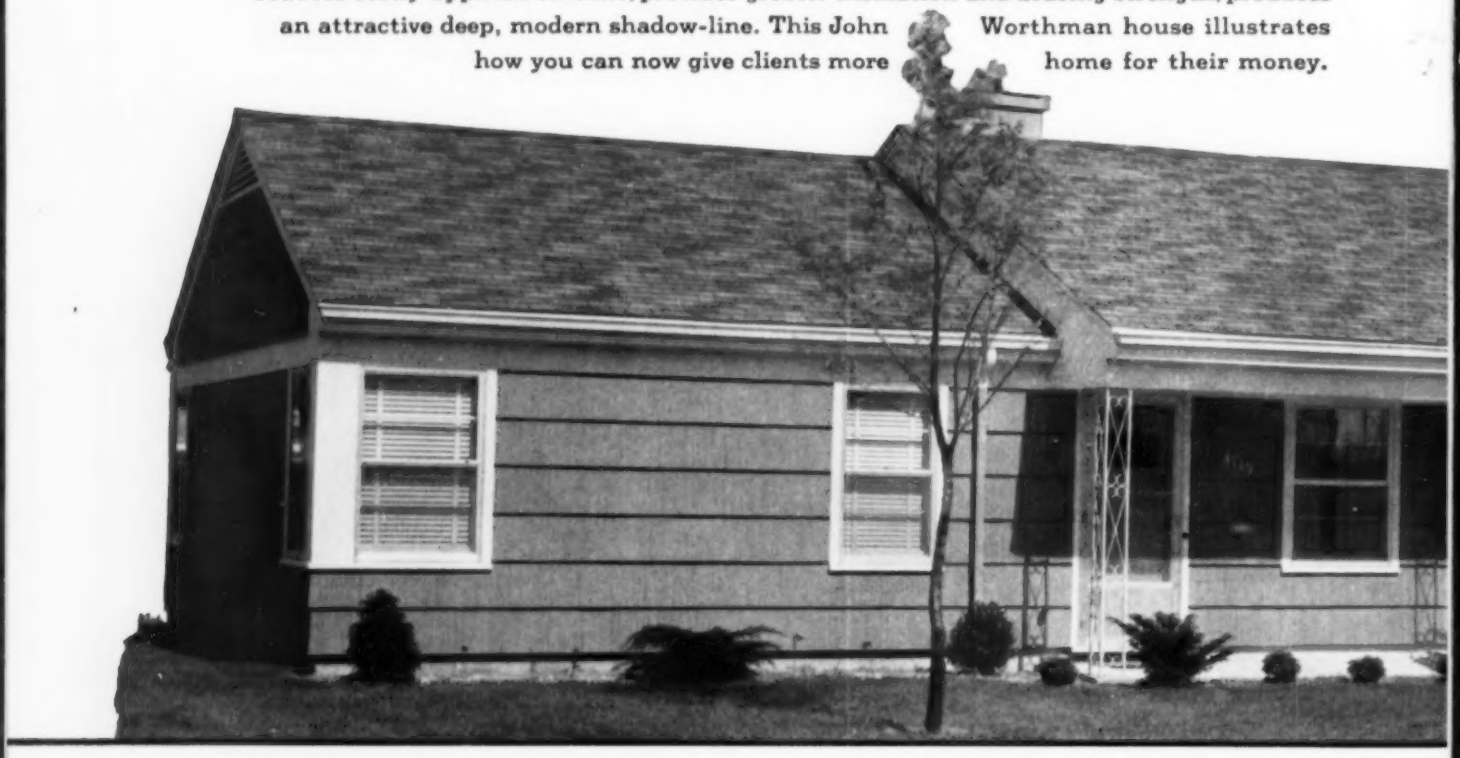
MILLS *Movable* **METAL WALLS**

The new Mills Catalog No. 53 is a practical 48-page workbook on Space Control. It is fully illustrated with typical installations and contains complete descriptions, detail drawings and specifications. We'll gladly send you a copy on request.

JOHN R. WORTHMAN,
President, John R. Worthman, Inc.,
Fort Wayne, Indiana

"We cut sidewall per M with Shingle-Backer

Now you can maintain high standards of home construction and design, yet save clients $80 to $120 per home with this new Insulite Shingle-Backer System. It reduces costly application time; provides greater insulation and bracing strength; produces an attractive deep, modern shadow-line. This John Worthman house illustrates how you can now give clients more home for their money.

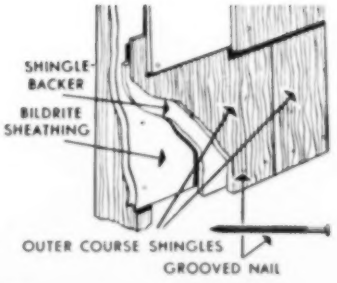


First, Bildrite Sheathing. Cuts application time as much as 43%. One carpenter can sheath 1,000 sq. ft. in 8 hours or less. Four-foot sheets have twice the bracing strength of horizontally-applied wood sheathing, thus saves cost of corner-bracing. 4-foot Bildrite was the *first* insulating sheathing to be accepted for use without corner-bracing. Has more than twice the insulation value of wood sheathing.

Then, Insulite Shingle-Backer. Handy four-foot panels apply faster and easier than wood under-course shingles . . . reduce application time by half. Produce deep, modern shadow-line. Practically eliminates waste. Waterproofed throughout with asphalt. Shingle-Backer and exterior shingles combined have approximately twice the insulation value of double-coursed wood shingles.

costs $83.00 Insulite's new System!"

Resists winds beyond 250 M.P.H. In a wind-tunnel test conducted at the University of Minnesota, a test panel was exposed to a 250 mile-per-hour air blast. Not a shingle was loosened. (Winds over 90 M.P.H. are classified as being of hurricane velocity.)



This typical home in John Worthman's Indian Village development illustrates the deep, modern shadow-line that Shingle-Backer, Insulite's new insulating under-coursing, gives homes. Insulite's Bildrite Sheathing provides twice the bracing strength and insulation value of wood sheathing.

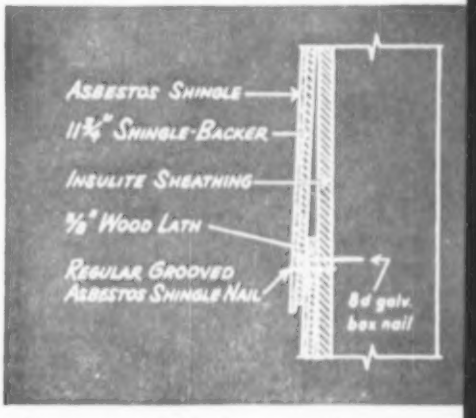
INSULITE AND BILDRITE ARE REG. T.M., U. S. PAT. OFF.

Facts For Architects. The Insulite Technical Service Department will gladly supply you with complete data on this approved double-course shingle application method. Have your secretary write Insulite, Minneapolis 2, Minnesota.

INSULITE DIVISION,
Minnesota and Ontario Paper Company,
Minneapolis 2, Minnesota

New! Insulite develops glamour treatment for asbestos-cement shingled walls!

Yes, this is an asbestos-cement sidewall! Insulite's new Shingle-Backer System for *asbestos-cement siding shingles* creates that attractive shadow-line that makes it look richer, more expensive. Yet, this better-built, better-looking sidewall costs no more (and in some cases up to $2.53 a square *less*) to build than asbestos-cement shingles directly over wood sheathing!



Asbestos-cement shingles are applied to Insulite Sheathing . . . no special nails or fasteners are needed. System increases shingle exposure from customary 10½" to 11". Shingle-Backer provides cushioned base . . . reduces shingle breakage. System eliminates need for building paper. Increases insulation. Builds stronger, tighter walls. Write Insulite for complete data.

Build and insulate with double-duty

INSULITE

Made of hardy Northern wood

The Shoppers'

a bellwether in merchandising . . . a success in investment . . . a milestone in architecture

SHOPPERS' WORLD was located on 6-cents-a-foot meadowland but draws on suburban areas west of Boston.

This group of forty-four stores at Framingham, Mass., rose from seventy acres of countryside after five years on the drawing boards of Ketchum, Gina and Sharp, New York.

Notable in many ways—for its two-story construction, for having the largest clear-span dome in the United States, for its mall as vehicle-free space for pedestrians—the Shoppers' World has been likened to a "Single Giant Showcase". Full-height plate glass fronts on both decks reveal 3,000 lineal feet of merchandising display.

To provide the utmost in clarity of vision with a minimum of distortion, all glass used in the store fronts of this $8,000,000 project is ¼" Libbey·Owens·Ford Polished Plate Glass.

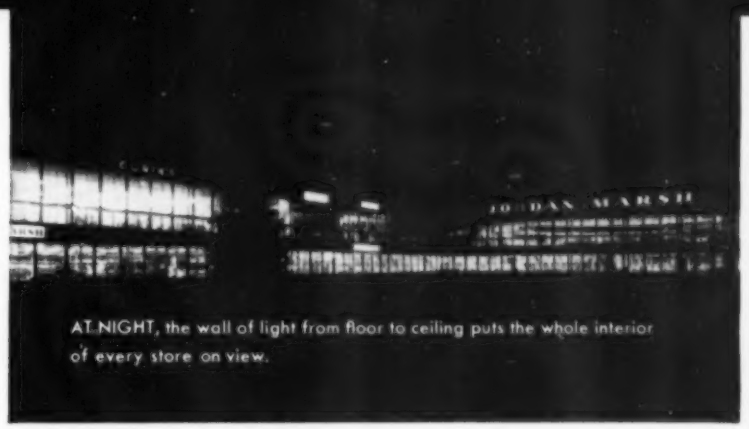
Libbey·Owens·Ford Glass Company, 8343 Nicholas Building, Toledo 3, Ohio.

NO FINER GLASS THAN

LIBBEY·OWENS·FORD

PLATE GLASS

World



AT NIGHT, the wall of light from floor to ceiling puts the whole interior of every store on view.

THE CENTRAL MALL, upon which all stores face, provides safe walking and resting for shoppers who find themselves in the center of an enormous L-O-F Plate Glass "showcase".

▲ IN WINTERTIME, walkways are enclosed with storm sash to protect shoppers from cold wind, snow, slush and ice.

◀ JORDAN MARSH, occupying the big domed building, has full-height L-O-F Plate Glass windows and *Tuf-flex** Tempered Plate Glass Doors to create the greatest sense of intimacy between shoppers outside and the merchandise within.

IN SUMMERTIME, the covered walkways are pleasant promenades with the garden on one side and a continuous "Visual Front" on the other.

THE *Largest* ENTRANCE in the world

made for BOEING by INTERNATIONAL STEEL

in co-operation with:

MURRAY WILSON, Architect, Salina, Kansas
MANHATTAN CONST. CO., Gen'l Contr., Muskogee, Okla.
JOHN F. BEASLEY COMPANY, Erectors, Dallas, Texas

New unheard-of dimensions in mechanical doors! That, literally, was the challenge presented by the entrance doors for the new B-47 Flight Hangar built by Boeing Airplane Company at Wichita, Kansas.

Two openings each called for eight sections—66 feet wide . . . 60 feet high—a total width of 528 feet. Two other openings were 264 feet wide by 60 feet high. A total opening area of 95,000 square feet! And, each section of each door had to open independently—or, all had to operate simultaneously!

International's door engineers, working with the architects and Boeing planning staff, actually helped to develop new concepts in door design to accomplish all that these doors are called upon to do. These ideas are exemplified in the completed entrance—the world's largest.

If you have a door problem—unusual or commonplace—call in International's experienced door engineers.

Above is a close-up view of one of the giant sections of the Boeing Door

AVIATION DIVISION

INTERNATIONAL STEEL COMPANY

1960 EDGAR ST. • EVANSVILLE, IND.

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Johns-Manville TERRAFLEX PLASTIC TILE

(made of vinyl plastic and asbestos)

...for longer wear

Johns-Manville, the pioneer in vinyl plastic flooring, made the first installation of this type floor in 1933 and 1934 at the Chicago World's Fair. Twenty million people walked over this unique new plastic floor tile during these years, and accurate micrometer measurements before and after showed no appreciable wear. The same tile, reinstalled in another location is still in use today! It still looks like new!

...for clearer colors

Choose from a large range of Terraflex colors that have clearer, brighter tones than ever before obtainable in resilient floor covering. These colors will not fade, can not wash out and will never lose their sheen from constant wear. Johns-Manville Terraflex will keep its first-day-newness a lifetime.

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Because of its nonporous surface, Terraflex* Plastic Tile can be cleaned without scrubbing, will stay bright without waxing (although, waxing will give it additional luster). Terraflex Plastic Tile is unaffected by grease, oil, alkaline moisture, and mild acid solutions. Its resistance to moisture makes it ideal for below-grade and on-grade installations.

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For THE BEST there is in flooring—look to Johns-Manville Terraflex. Send for a free brochure showing the full color line of Johns-Manville Terraflex Plastic Tile and Asphalt Tile. Write Johns-Manville, Box 60, New York 16, N. Y.

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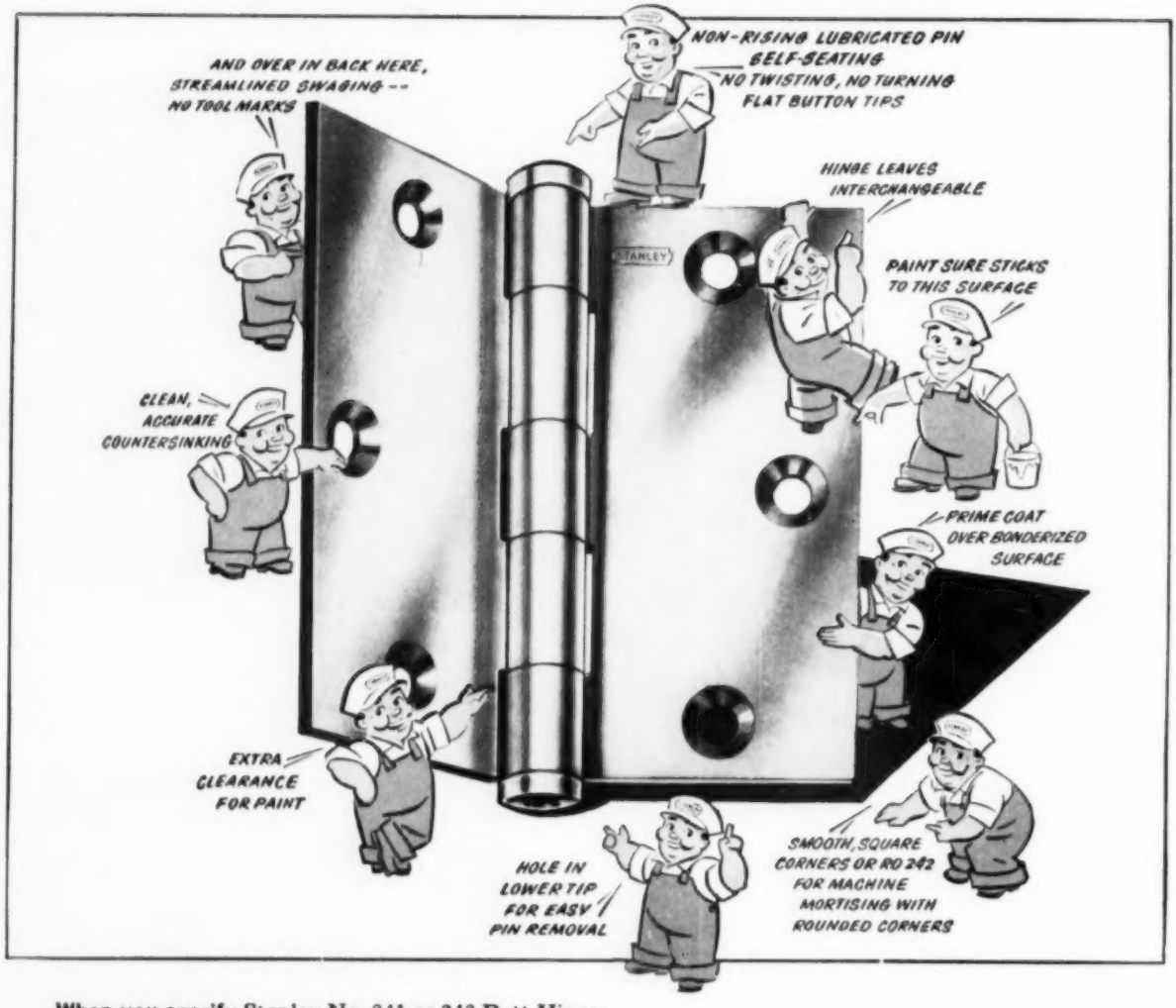
Johns-Manville

TERRAFLEX AND ASPHALT TILE FLOORING

There is a difference in hinges

Here's why most builders specify STANLEY No. 242*


AND OVER IN BACK HERE, STREAMLINED SWAGING -- NO TOOL MARKS
NON-RISING LUBRICATED PIN
SELF-SEATING
NO TWISTING, NO TURNING
FLAT BUTTON TIPS
HINGE LEAVES INTERCHANGEABLE
PAINT SURE STICKS TO THIS SURFACE
CLEAN, ACCURATE COUNTERSINKING
PRIME COAT OVER BONDERIZED SURFACE
EXTRA CLEARANCE FOR PAINT
HOLE IN LOWER TIP FOR EASY PIN REMOVAL
SMOOTH, SQUARE CORNERS OR RO 242 FOR MACHINE MORTISING WITH ROUNDED CORNERS

When you specify Stanley No. 241 or 242 Butt Hinges for doors of residences, apartment houses and other medium weight low frequency wood doors, you *know* the hinges will endure for the life of the building. Generations of architects and builders have made the Stanley 241 Hinge the Standard of the World.

***No. 242,** *Flat Button Tip prime coated for painting.*
No. 241, *regularly furnished with ball tip in plated finishes, flat button tip on order (FBT).*

REMEMBER . . . THREE HINGES TO A DOOR

The Stanley Works, New Britain, Conn.

STANLEY

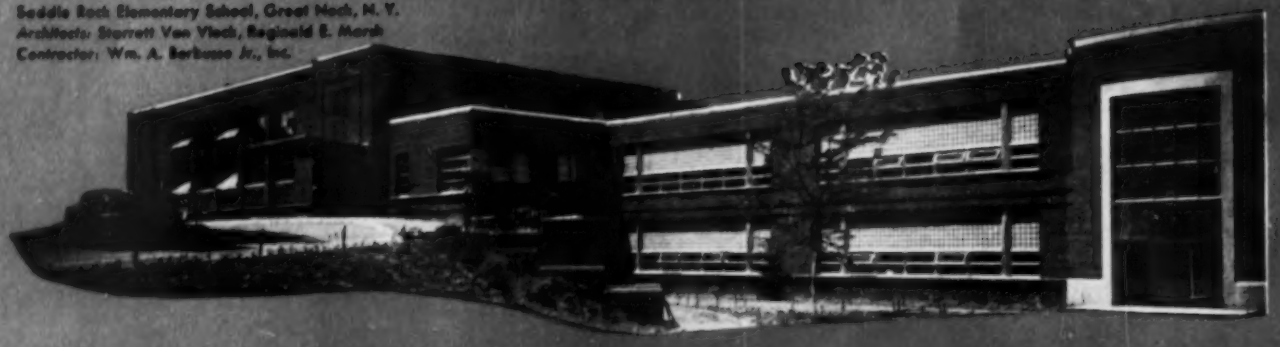
Reg. U.S. Pat. Off.

HARDWARE • TOOLS • ELECTRIC TOOLS
STEEL STRAPPING • STEEL

Sessions Engineering Co., Architects
MODERN DOOR CONTROL BY LCN · CLOSERS CONCEALED IN DOOR
NEW PLANT OF POWERS REGULATOR COMPANY, SKOKIE, ILLINOIS
LCN CATALOG 11-E ON REQUEST OR SEE SWEET'S · LCN CLOSERS, INC., PRINCETON, ILLINOIS

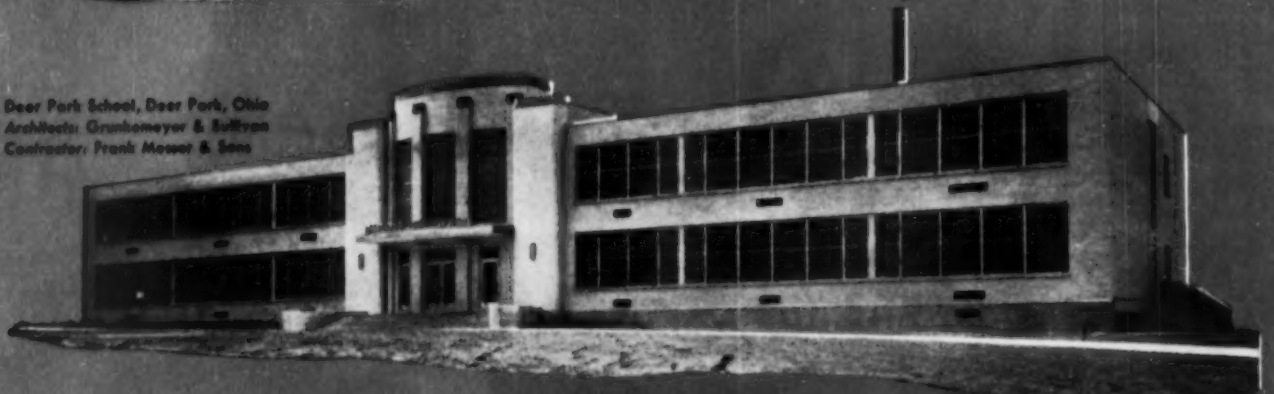
Your new SCHOOL BUILDING.. but make sure it has..

Saddle Rock Elementary School, Great Neck, N. Y.
Architects: Starrett Van Vlack, Reginald E. Marsh
Contractor: Wm. A. Barbour Jr., Inc.

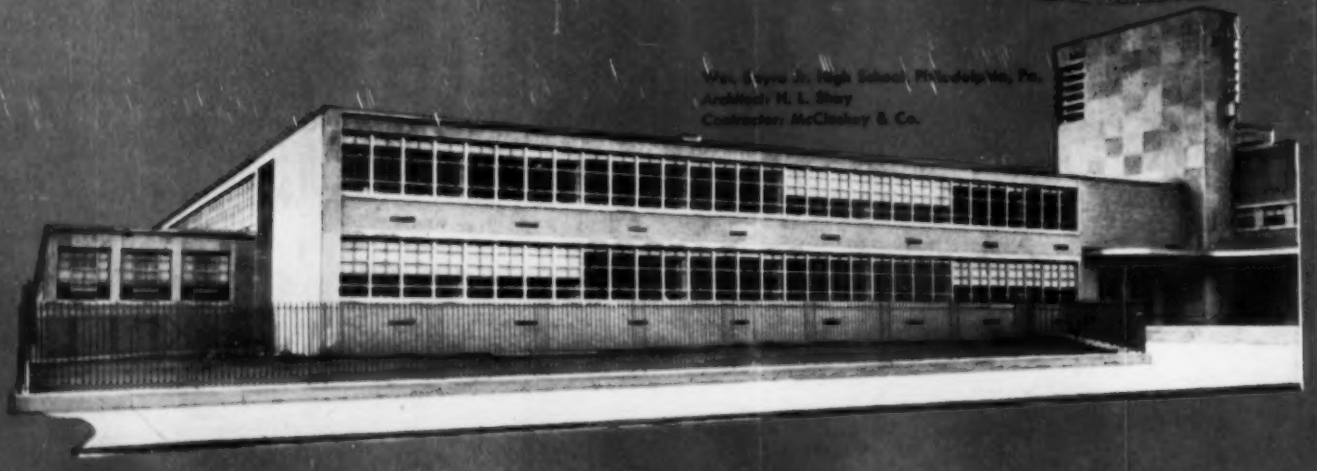


Wm. Penn School, Pittsburgh, Pa.
Architect: Joseph Hoover
Contractor: Hofmeister Contracting Co.

Deer Park School, Deer Park, Ohio
Architects: Grunhomeyer & Sullivan
Contractor: Frank Mosser & Sons



Wm. Penn Jr. High School, Philadelphia, Pa.
Architect: H. L. Shay
Contractor: McCloskey & Co.



..design it any style you like

..*Quality Approved*

ALUMINUM WINDOWS

If you want lowest maintenance costs!

Building design and style may vary, depending upon local requirements and taste. But if you want to make sure of lowest possible maintenance costs, be sure you insist upon "Quality-Approved" aluminum windows.

No other building material adds so much to a building's appearance —or subtracts so much from its maintenance budget.

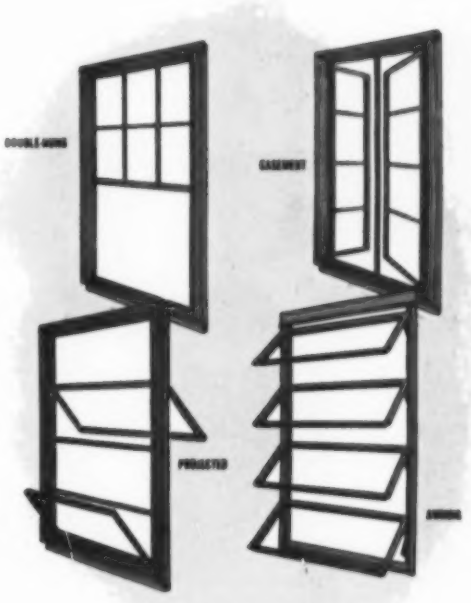
"Quality-Approved" aluminum windows help reduce school operating costs—save important maintenance dollars year after year. They cannot rust or rot—never need painting or costly repairs. They always operate without trouble and remain beautiful for the life of the building.

"Quality-Approved" aluminum windows are available through many manufacturers in sizes and styles (double-hung, casement, projected and awning) to fit any design treatment.

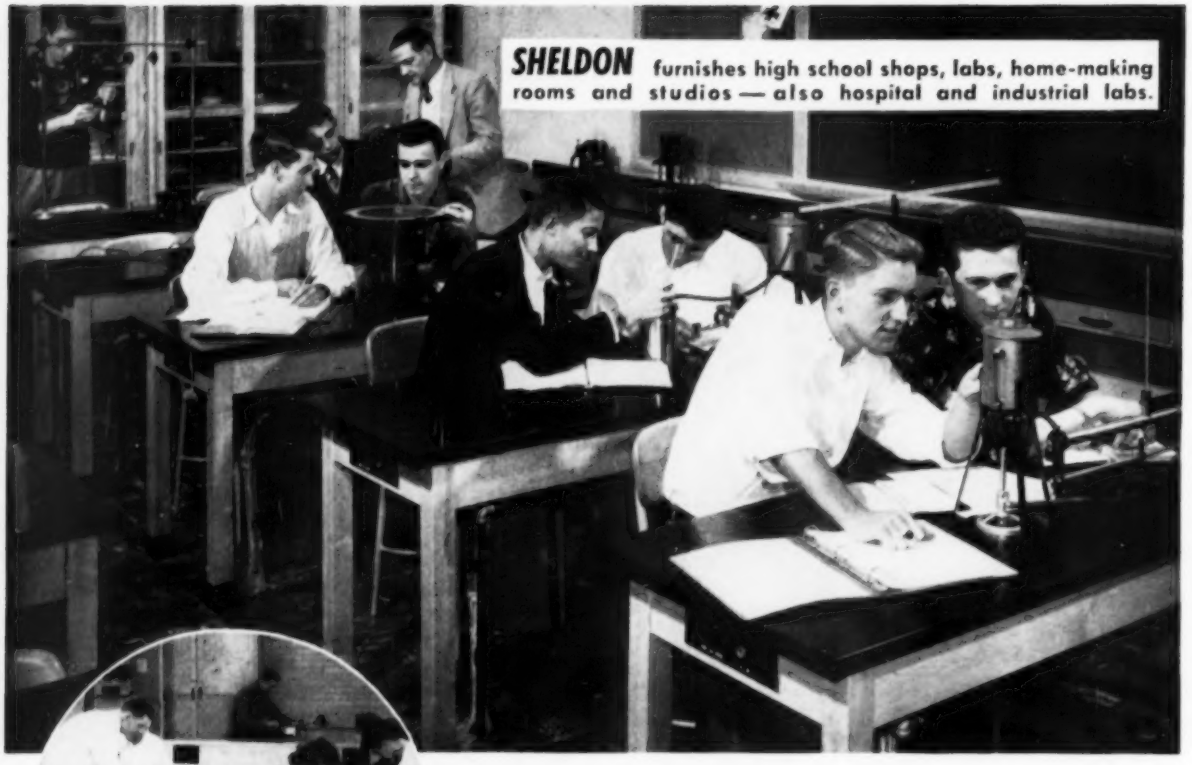
For copy of our Window Specifications book and names of approved manufacturers, see Sweet's (17a/ALU) or write to Dept. PA-4.

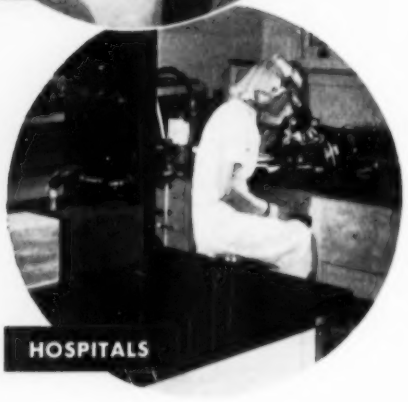
Aluminum Window Manufacturers Association

74 Trinity Place, New York 6, New York



INSIST ON THIS SEAL FOR YOUR PROTECTION





BUSY SPACE IN BUSY AREAS

You squeeze the last bit of use out of every foot of space when you specify Sheldon furniture for spots where a lot is happening in a small area. Design and development of each Sheldon piece is directed by its precise function, geared to the best thought of users and planners, and unfolded in conformity with Sheldon's continuous research. The finest materials go into it, and a combination of beauty and flawless craftsmanship. There is a perfect pattern of Sheldon furniture for every room. Call in your Sheldon man to help you plan.

E. H. SHELDON EQUIPMENT COMPANY
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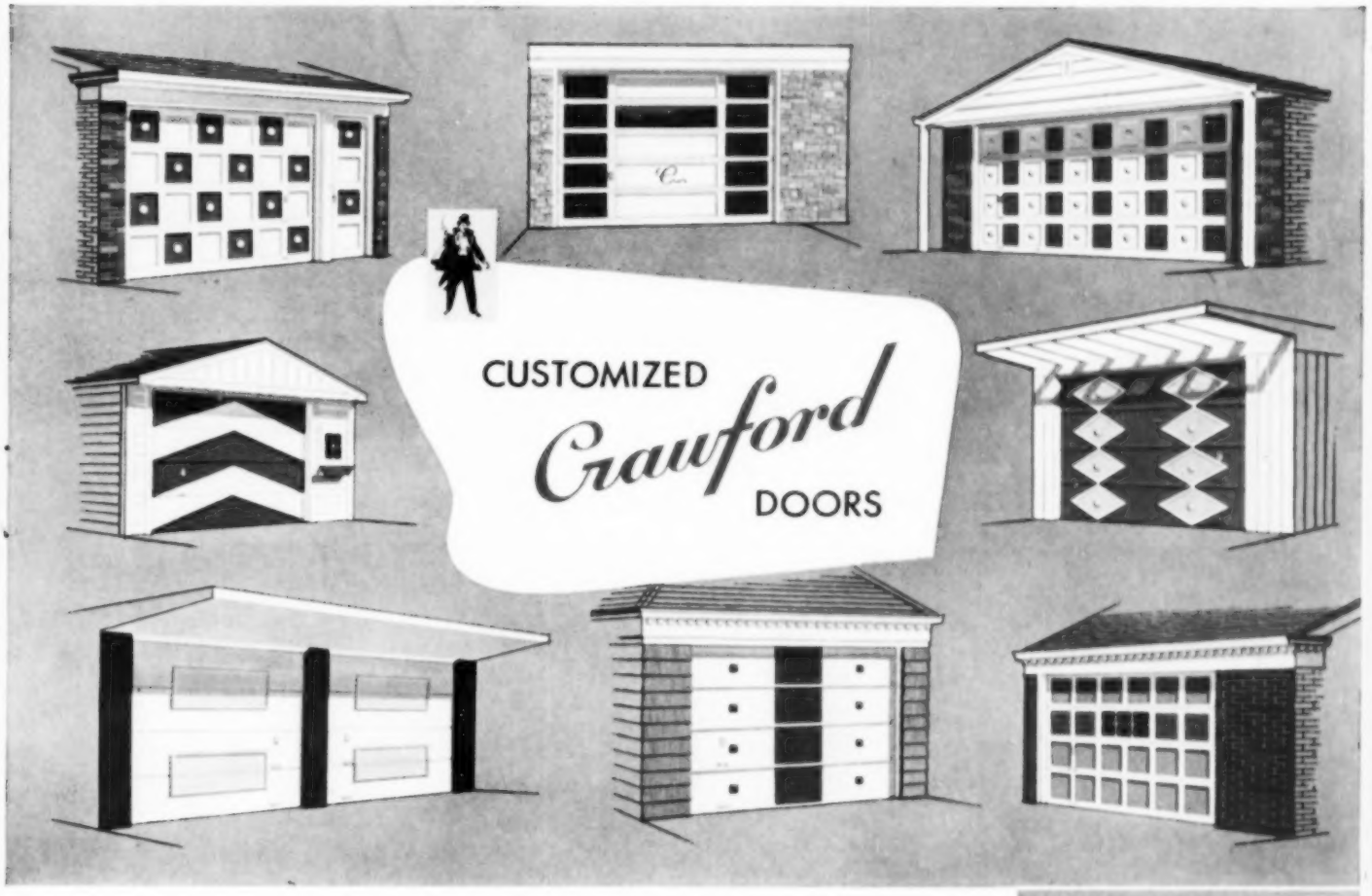

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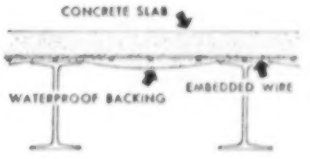
The architects specified that the concrete be poured over Steeltex Floor Lath, and they did so for very good reasons. The strong welded-wire mesh added great strength to the slab, while the tough water-proof backing permitted work on the floor below and assisted in proper curing of the concrete. These inherent virtues tended to allow greater latitude in deck design.

If you are not completely familiar with the use of Steeltex in concrete floor construction, it may well be of profit to you to contact us or consult our catalog data in Sweet's before designing your next structure. For details, write for Catalog D.S. 133, Dept. PA, Pittsburgh Steel Products Company, Grant Bldg., Pittsburgh 30, Pa.

Note, in the cross-section and close-up that the weight of the wet concrete forces the backing away, which permits the galvanized welded wire mesh to assume its proper position in the slab. Steeltex Floor Lath also performs two other functions. It permits work on the floor below while pouring is in progress and retains moisture to assist proper curing.



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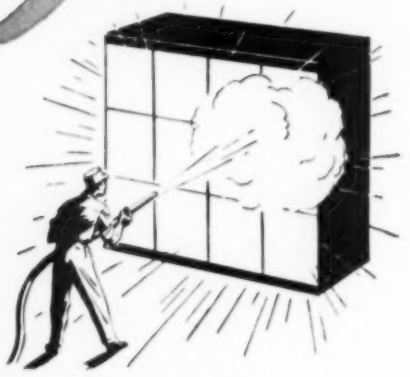

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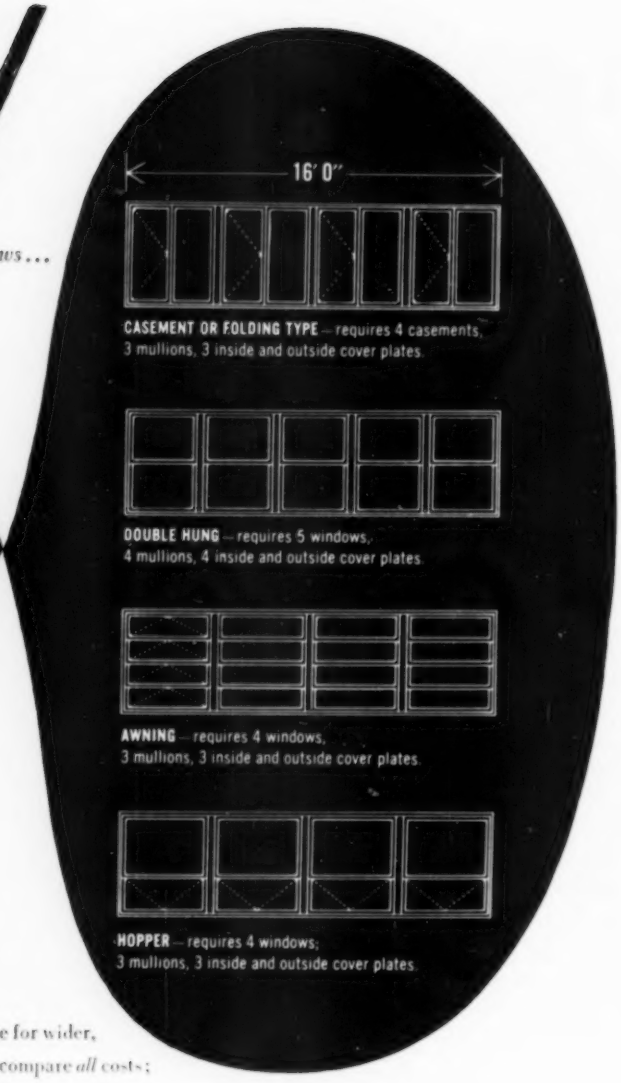
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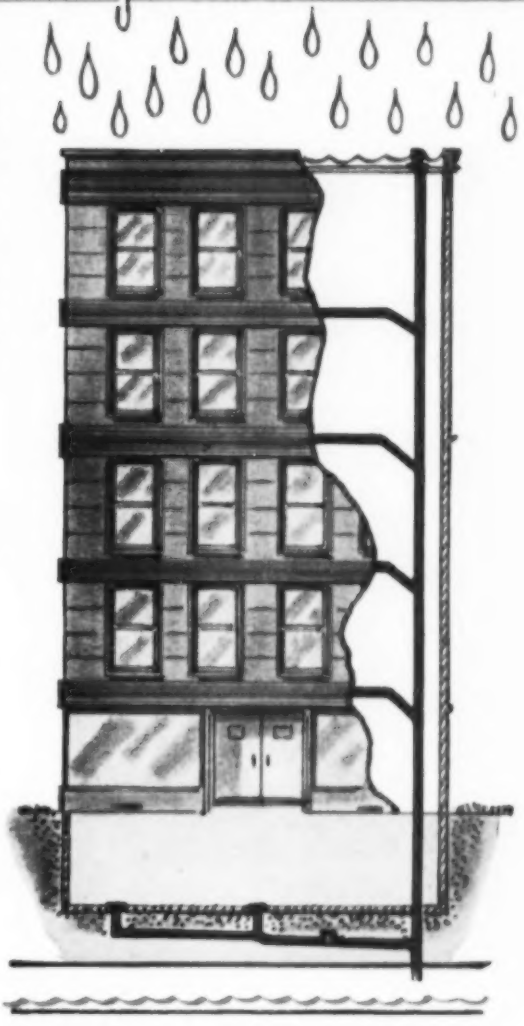

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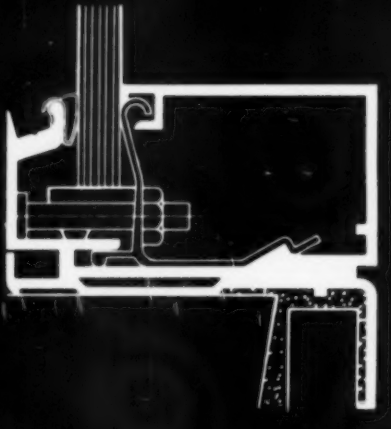

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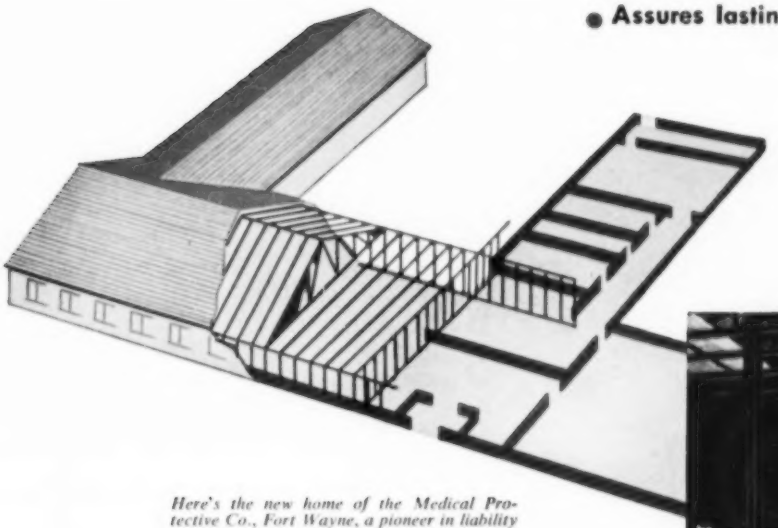
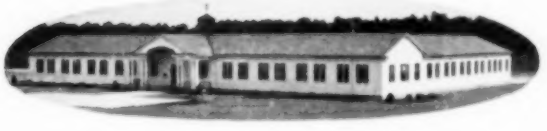


Here's the new home of the Medical Protective Co., Fort Wayne, a pioneer in liability insurance for the medical profession. Cutaway drawing above shows a portion of the building's Stran-Steel Framing system, including exterior walls, interior partitions, and roof trusses.

Walls and bearing partitions are of Stran-Steel studs. At left, architect's detail drawing shows section of wall.



The new Medical Protective Company's building was completed and in use in less than 10 months. "The time saved in construction," according to B. R. Lancaster, Vice President and Secretary, "due to use of Stran-Steel Framing, resulted in considerably less cost."

Architect for this building was John D. Martindale, A.I.A., and general contractor was Civilian Building and Supply, both of Fort Wayne.

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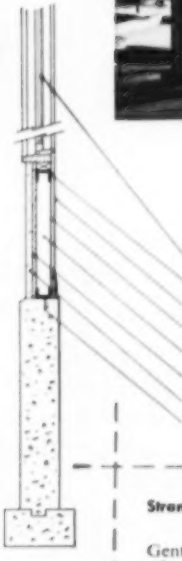

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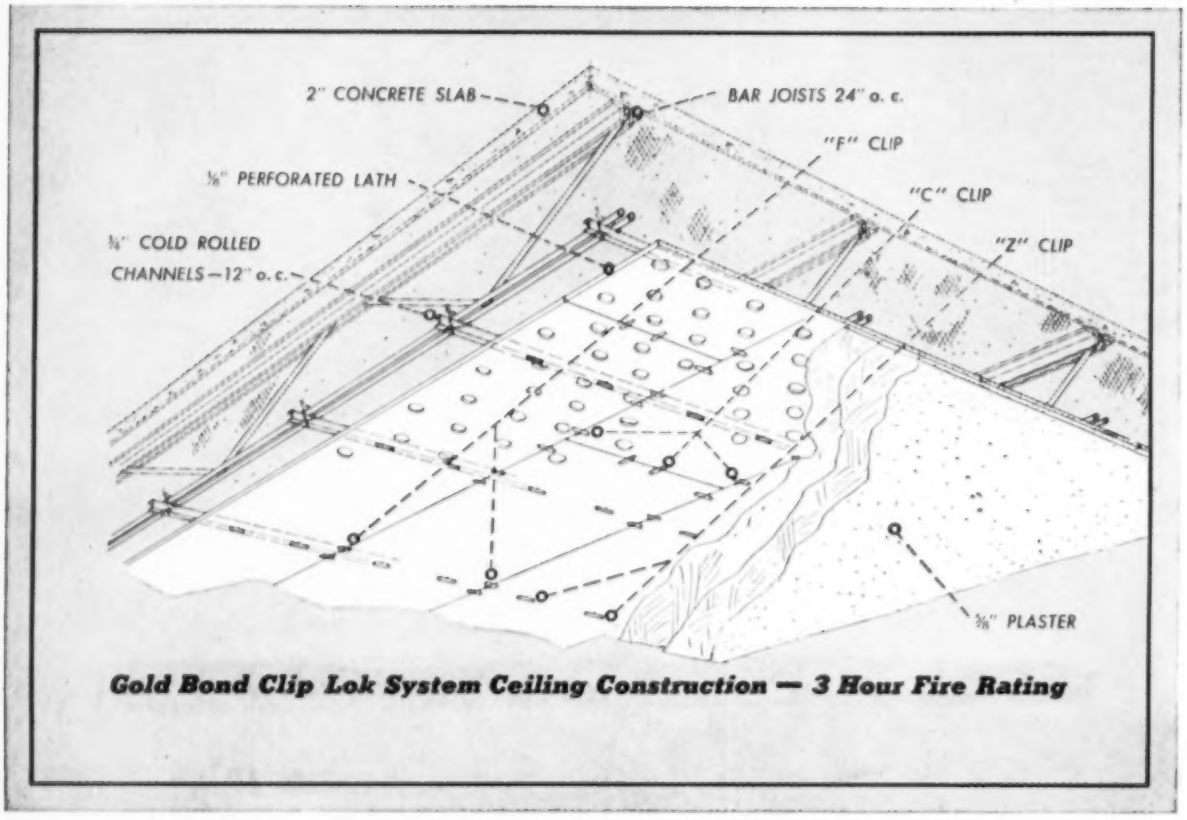

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Plans for bathrooms, kitchens and utility rooms win $23,000 in prizes

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Edward Hicks, Chicago, Illinois
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3rd—*John Ridley, Seattle, Washington*
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3rd—*Arthur A. Gorrell, Jr., Carlsbad, New Mexico*
Mentions—*Robert E. McConnell, Massachusetts Institute of Technology*
Robert Lee Jones, Kansas University
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Hugh N. Romney, Newark, New Jersey
Jinny Lee Snow, Royal Oak, Michigan

489 architects, designers, draftsmen and students submitted entries in the nation-wide Crane architectural competition which has just ended.

$23,000 in prizes were awarded for 32 winning designs: Four first prizes (one for each division of the contest) of $3,000 each . . . four second prizes of $1,500 each . . . four third prizes of $750 each . . . and twenty mentions of $100 each.

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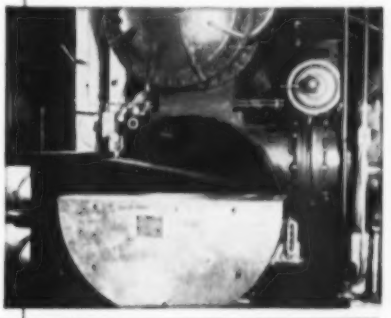
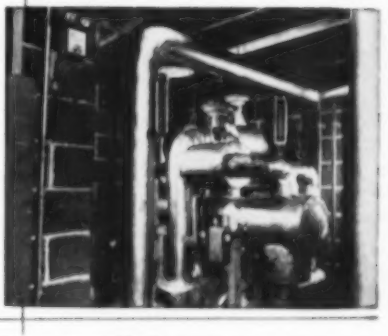
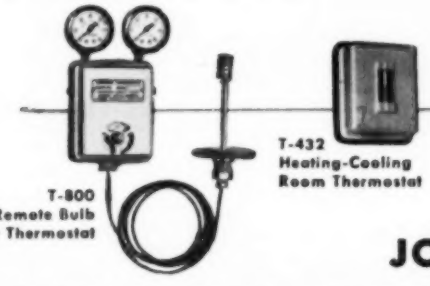


Johnson T-901 Remote Bulb Submaster Thermostats, readjusted by S-222 Gradual Switches, control the capacity of each of two 350-ton Carrier centrifugal refrigerating machines that furnish chilled water for the cooling system.



Behind the scenes, in machine rooms, Johnson T-800 Master Remote Bulb Thermostats, measuring the outdoor temperature, readjust T-901 Submaster Thermostats which control V-185 Valves on the steam supply to the converters.

Hotel guest rooms have units supplied, during the heating season, with hot water and, during the cooling season, with chilled water controlled by Johnson Submaster instruments. Many individual offices in the building have Johnson T-432 Heating-Cooling Room Thermostats in addition.



T-800 Remote Bulb Master Thermostat

T-432 Heating-Cooling Room Thermostat

JOHNSON *Automatic Temperature and Air Conditioning* **CONTROL**

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Plasterers, lathers, architects, contractors, builders and dealers will find Keybead an easy-to-use, easy-to-handle plastering help. It is recommended for use where strong, economical, "true" plaster corners are a requisite on the job.

Quick and easy to lath, Keybead combines open-mesh reinforcing with a precision-formed bead. The open-mesh design of Keybead permits plaster to flow through the steel wires and give a generous bond of plaster to lath—a solid plaster corner results. This thorough steel wire embedment combined with the true-formed bead makes strongly reinforced, crack-resistant plaster corners. And, to prevent rust streaks, Keybead is galvanized, too.

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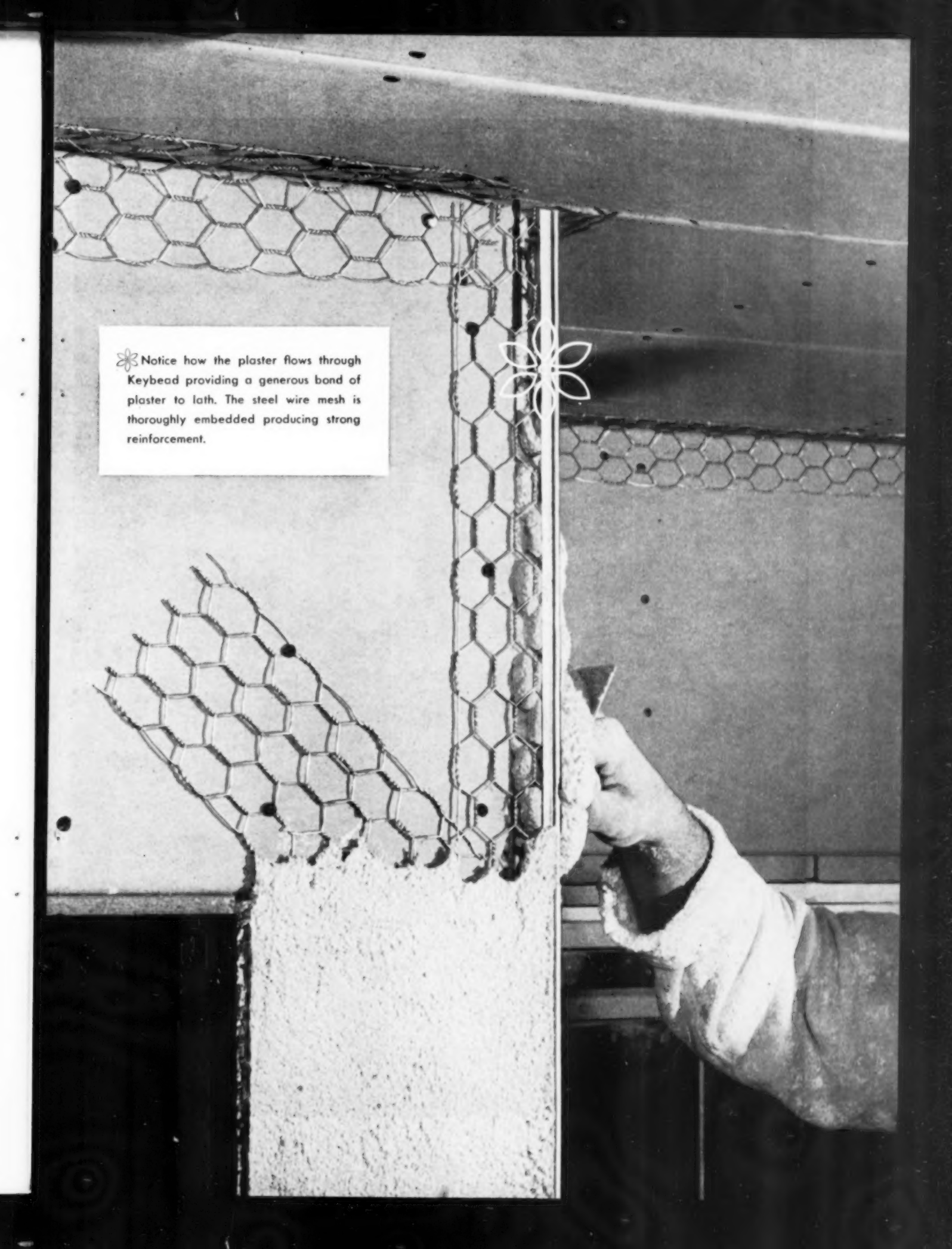

Notice how the plaster flows through Keybead providing a generous bond of plaster to lath. The steel wire mesh is thoroughly embedded producing strong reinforcement.

S. Russ Minter A. I. A., says:

"PC Light-Directing Glass Blocks are functional, flexible and economical"

THE assignment was typical: design the new Mt. Savage School near Cumberland, Md. without sacrificing needed educational facilities, and do it at rock bottom cost.

Architect Minter came up with a reinforced concrete structure, all types of special purpose rooms, lavatory and storage cabinets in each classroom, glazed tile wainscoting in halls and gymnasium, acoustic tile for all areas, and light-directing glass blocks for 50% of the exterior wall area. He did this for 59½ cents per cubic foot, at a time when comparable building costs in the area were a dollar per cubic foot and more.

According to Mr. Minter, "PC Glass Blocks, when properly used, result in a beautiful conception of translucent space. They offer a greater degree of flexibility in interior arrangement than previously possible with conventional fenestration."

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General Contractors: George F. Hazlewood Co., Cumberland, Md.

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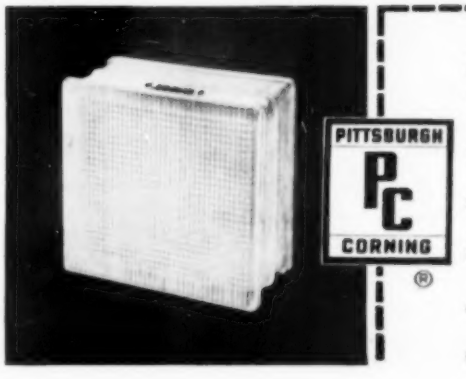
*T. M. Reg. applied for.



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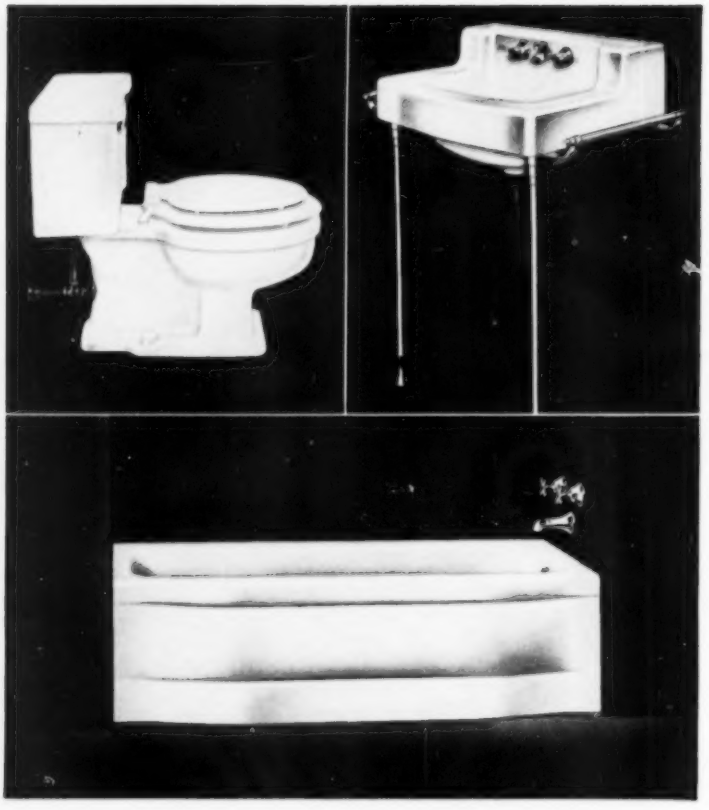

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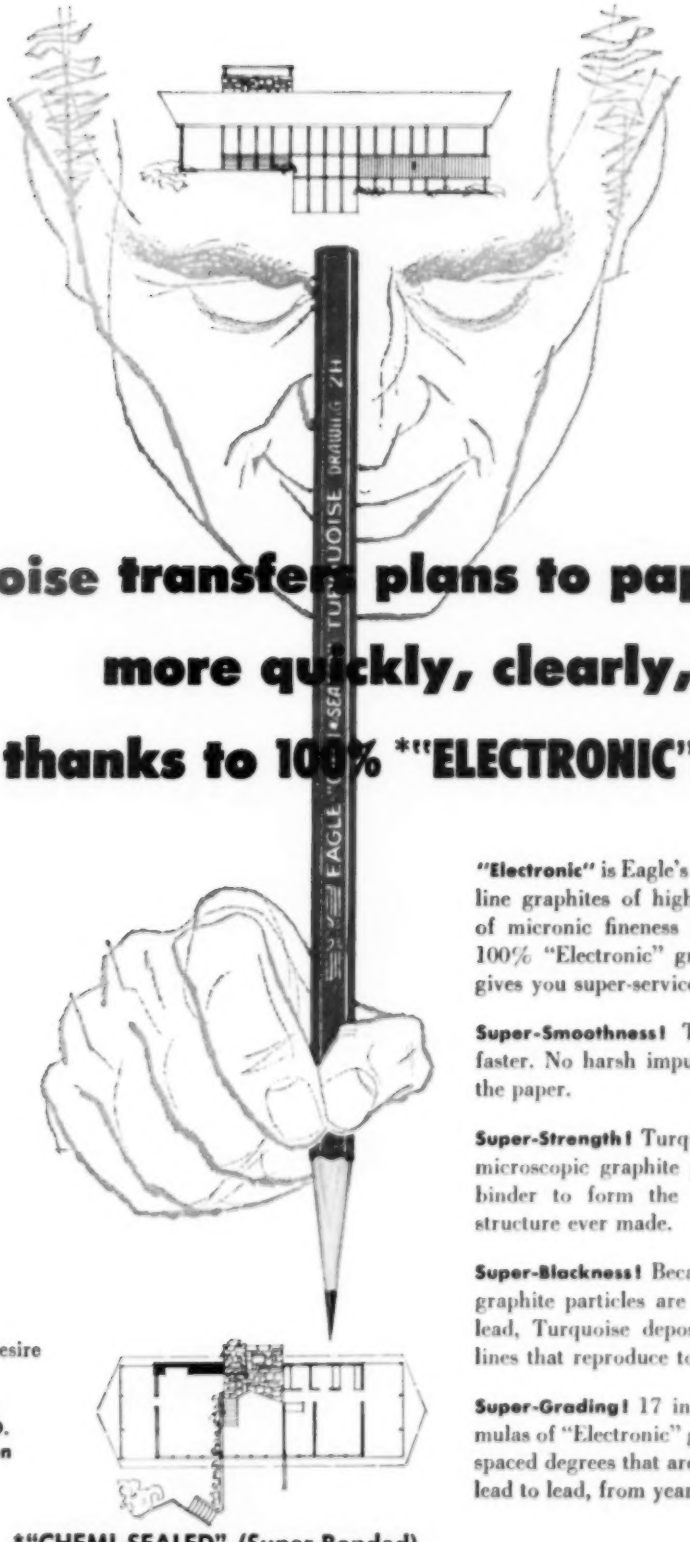

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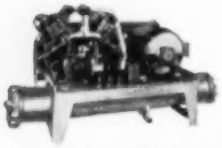

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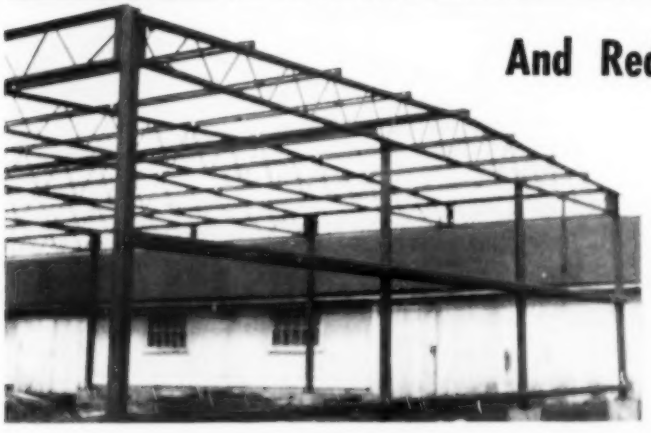

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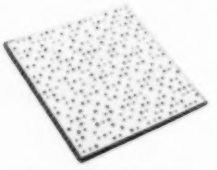
A cane fibre tile with a flame-resistant surface. This tile meets *Slow Burning* rating contained in Federal Specifications SS-A-118a. It may be washed with any commonly used solution, satisfactory for good quality oil-base paint finishes, without impairing its flame-resistant surface characteristics and without loss of sound-absorbing capacity. Repainting with Duo-Tex* flame-retarding paint will maintain peak efficiency. Supplied in all sizes and thicknesses of regular cane tile.



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Protected by U. S. Design Patent D 168763. A dramatically beautiful new cane fibre tile offering exciting new decorative possibilities for interiors of every type. Has sharp perforations of varying size arranged in random fashion, and a pattern that minimizes joint lines. Rich, linen-like surface that gives better light diffusion. High sound-absorbing value. Can be washed repeatedly, painted repeatedly.

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Mahon Roof Sump Recesses for use with Mahon Steel Deck can be furnished to fit any roof pitch. Mahon Cast Iron Sumps can also be furnished for 4", 5", and 6" conductors.

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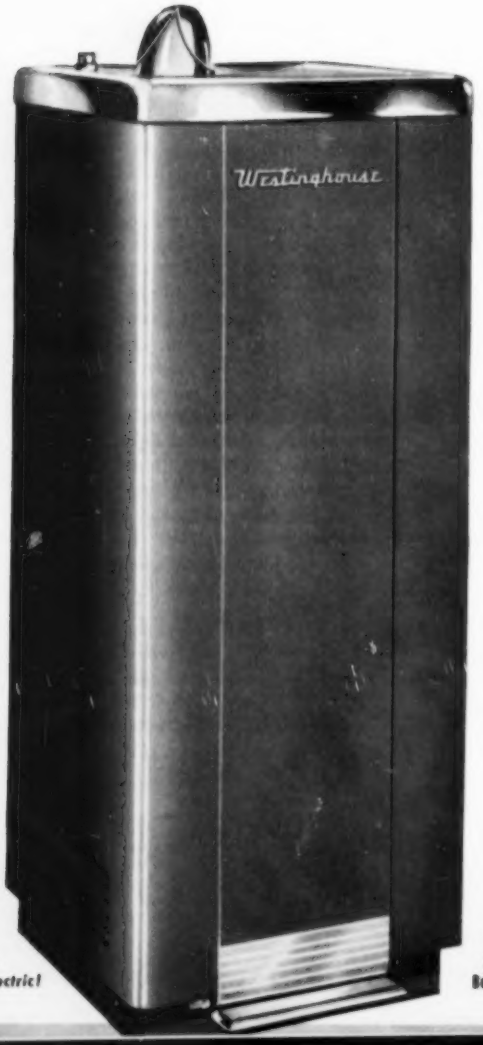

WS8A . . . Formerly WA7A, but now with added capacity, is listed as WS8A . . . 8-gallon capacity with the new *Super Sub-Cooler* and static condenser. Stainless steel top. Foot-pedal control. Automatic stream-height regulator. Anti-squirt bubbler. 12 other models available with capacities from 1 gallon to 22½ gallons.

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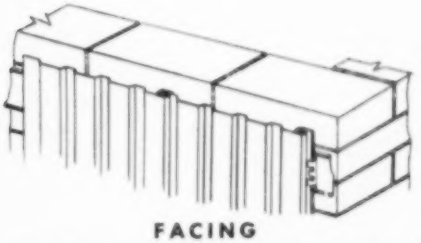

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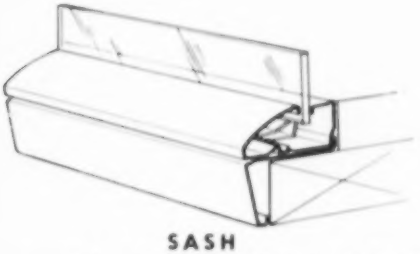

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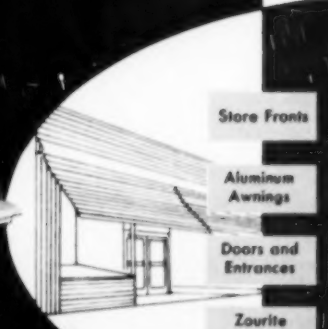

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METAL-EDGE PLANK
SHORT SPAN TILE

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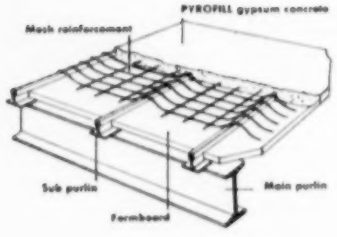

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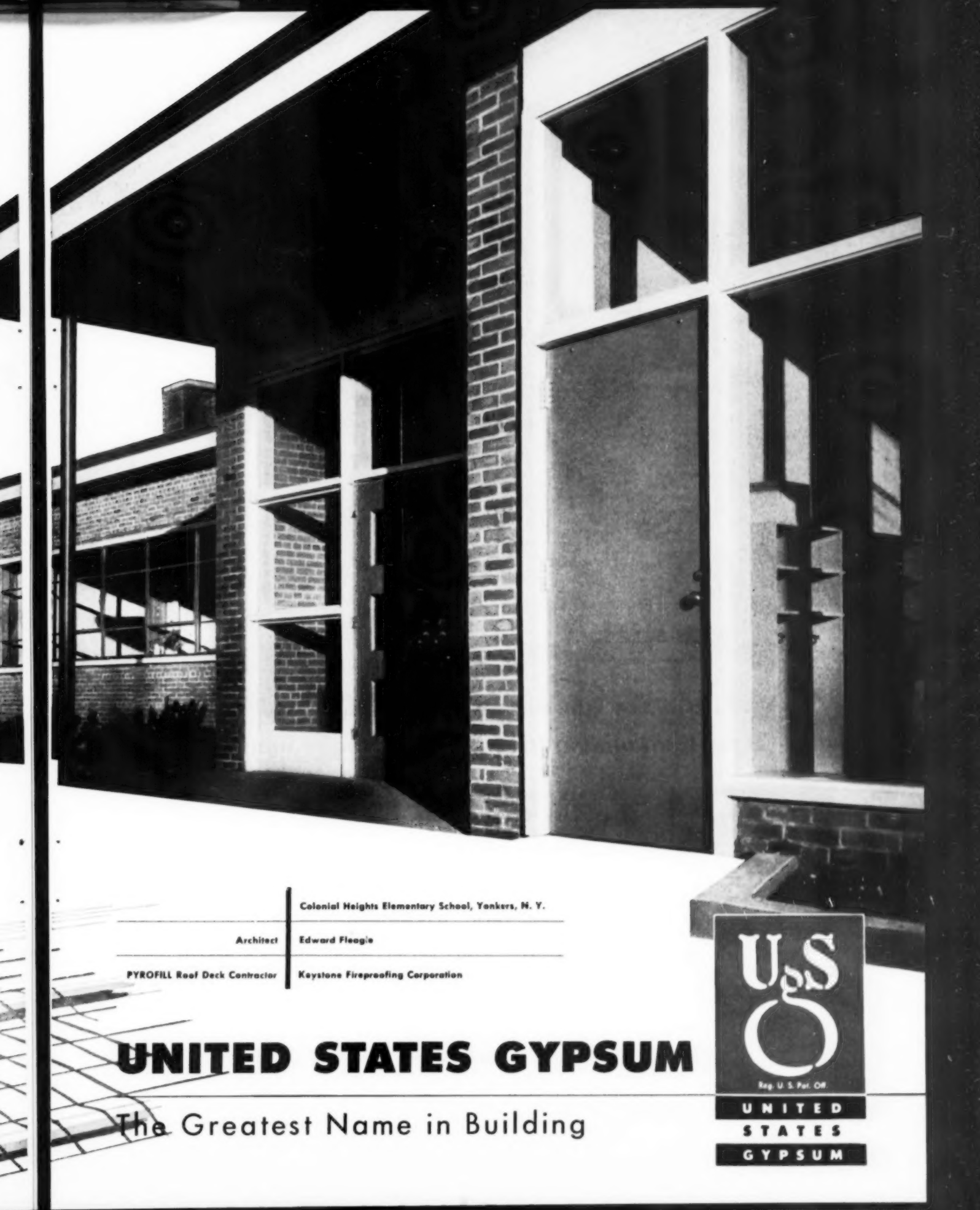

	Colonial Heights Elementary School, Yonkers, N. Y.
Architect	Edward Fleagle
PYROFILL Roof Deck Contractor	Keystone Fireproofing Corporation

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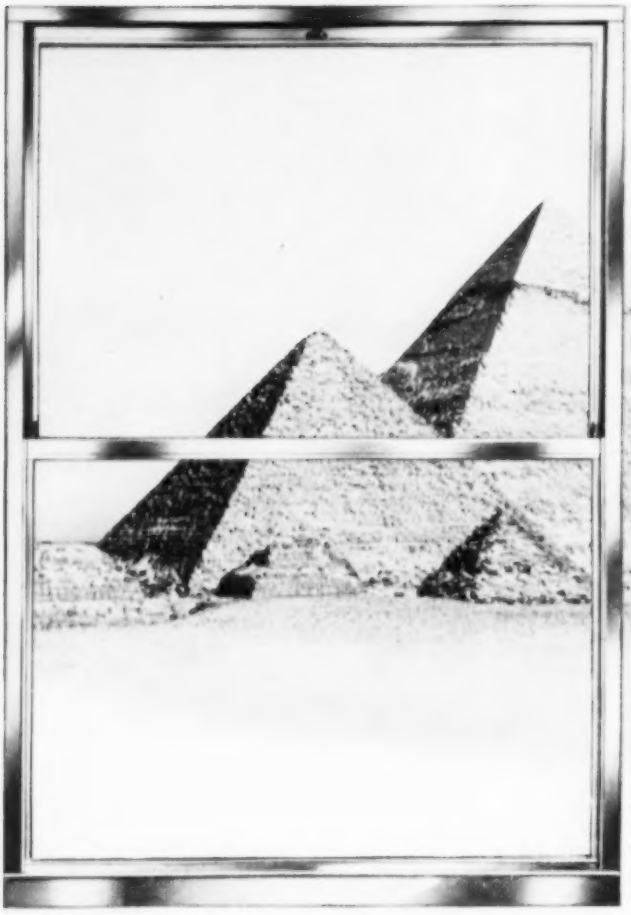

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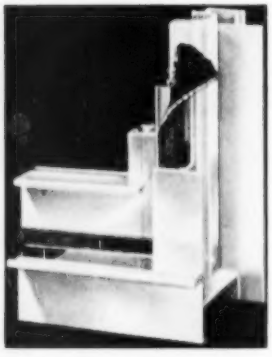

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Woven-pile Weather Stripping and Exclusive Patented Serrated Guides

•

Minimum Air Infiltration

•

Finger-tip Control

•

No Painting or Maintenance

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No Warp, Rot, Rattle, Stick or Swell

Literally, ADLAKE Windows pay for themselves by eliminating all maintenance costs except routine washing. Once installed, they'll keep their clean-cut good looks and easy operation for the life of the building, with no painting, scraping or other maintenance whatever! What's more, their woven-pile weather stripping and patented serrated guides give a *lasting* weather seal!

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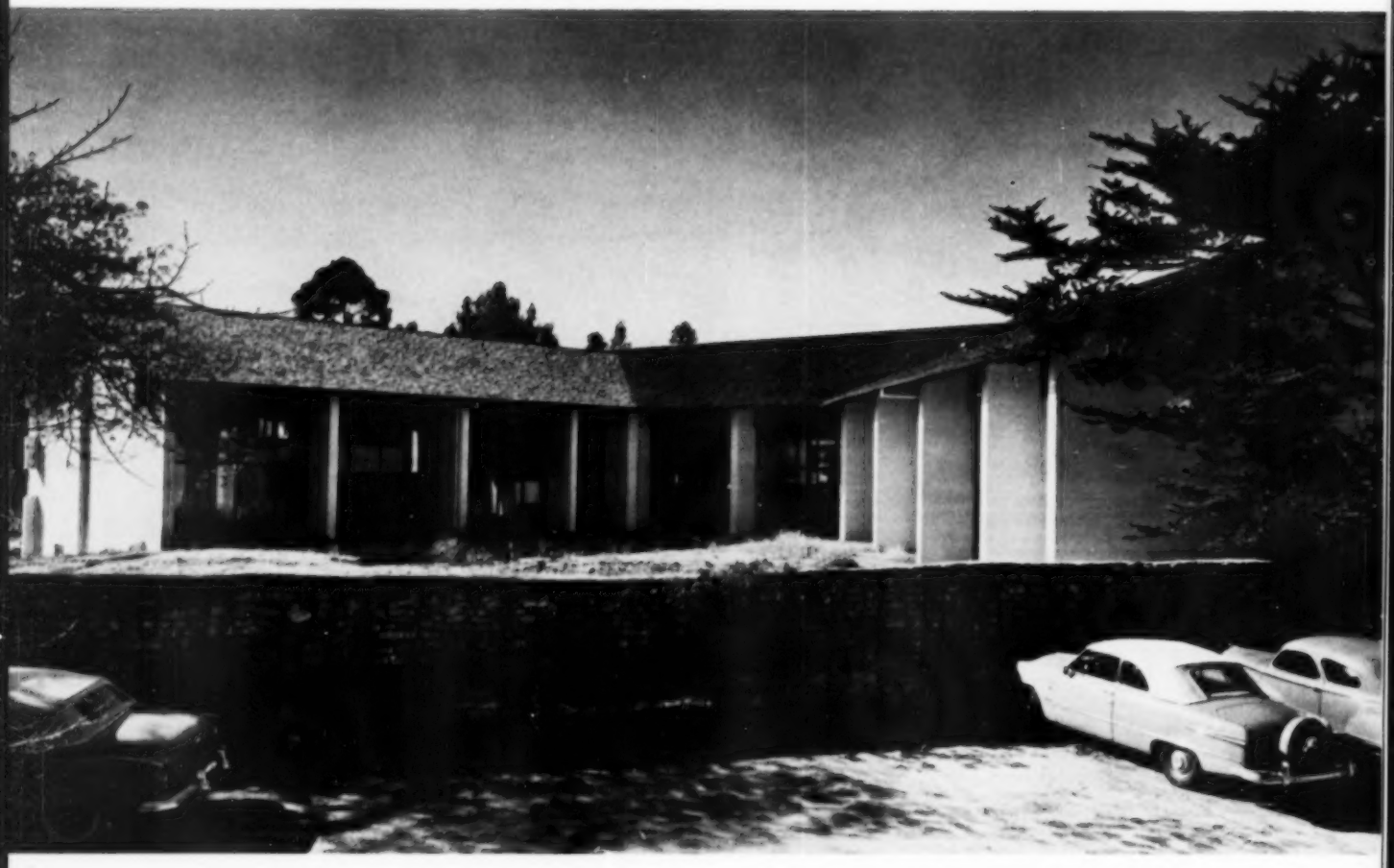
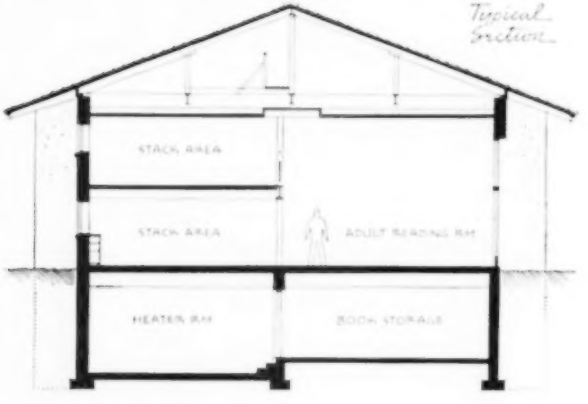
location	Monterey, California
architects	Wurster, Bernardi & Emmons
structural engineer	A. V. Saph, Jr.
mechanical-electrical engineer	James Gayner
general contractor	Harold Geyer

public library

Built on an odd-shaped site, the new library is planned for future expansion; stub ends of concrete frame at rear of building (above) *are for tying in construction. Contemporary in concept and plan, it was sensitively designed to fit in naturally among the city's rich historical treasures. The old Sherman headquarters and Larkin house* (R. A. Parker view at right) *are but one block away.* Photos: Roger Sturtevant

public library

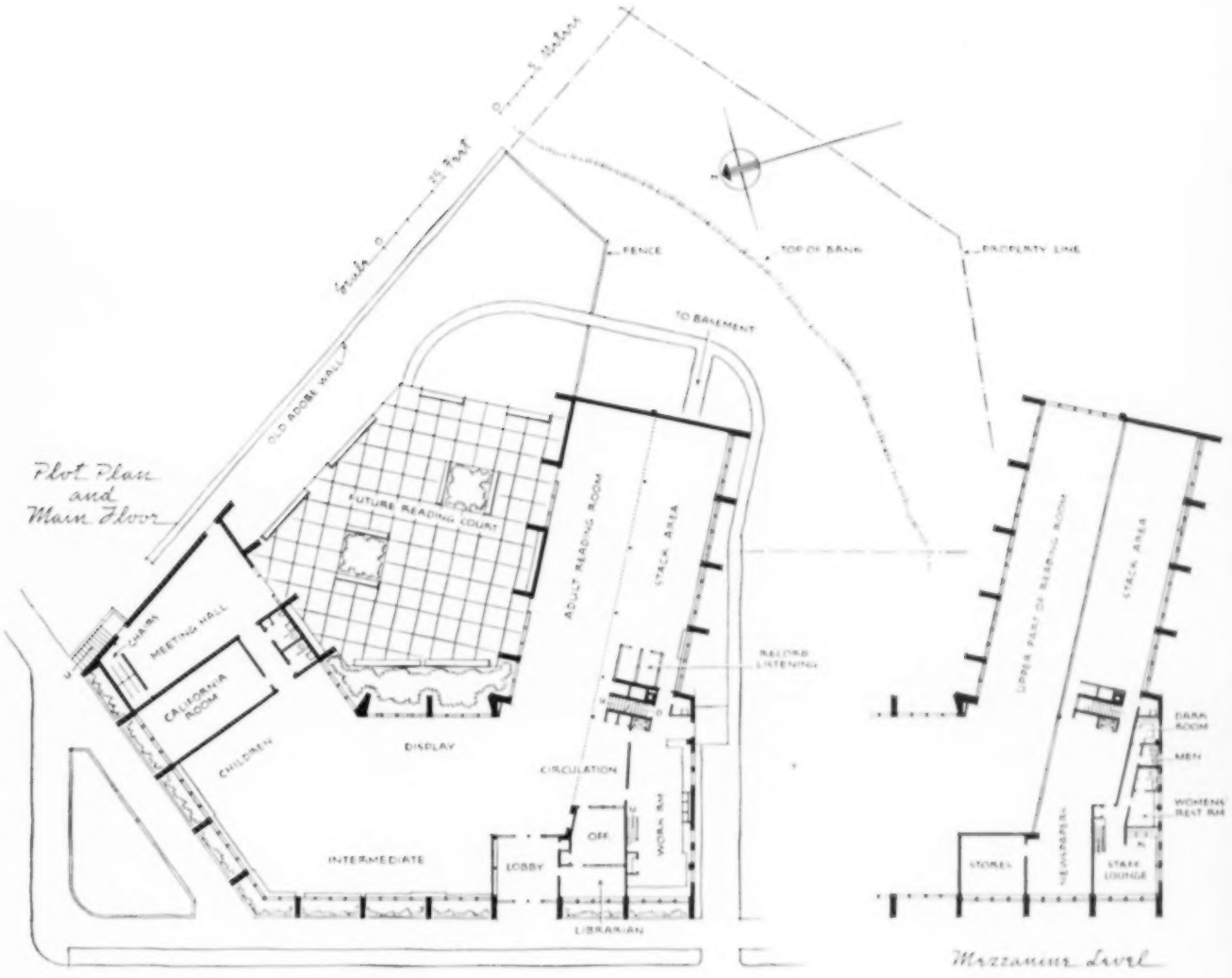




The irregular polygonal site, immediately next to one of the city's finest old houses (to the northeast), occurs at an intersection diagonally across from the main city plaza and city hall. Later, the Library Board hopes to acquire the re-entrant property on the south (at present, a soft-drink bottling plant) for future expansion. Taking advantage of the site, the architects placed the children's room in one arm of the plan, the adult reading room and stacks in the other, with central supervision over-all. Eventually, as the plot plan shows, a landscaped reading court will be developed at the rear of the building, with the old adobe wall bordering the historic neighboring property serving as its outer boundary (*large photo above*).

For the success of the project and its generous provisions—an historical room, a small meeting hall for both library and public use, music-listening booths, etc.—the architects ask that much credit be accorded to the late Delbert R. Jeffers, who was Librarian during the planning stage.

Commenting on the structural system, from which the building's esthetic qualities



As the photographs indicate, the outdoor reading court is as yet undeveloped. The exposed concrete buttresses along the two streetfronts (left and below) effectively shield the large glass areas. A partial basement occurs under the adult reading-room wing and contains heater room and storage space. The plan shows a future additional bay and window at the end of the wing.

directly derive, they say: "In order to achieve the feeling of the heavy Monterey-type walls and still bring in all the light needed for functional working, a scheme of concrete buttresses was adopted. To keep the spaces open and flexible, steel beams were embedded at the top, and the roof structure was built up from there. This system is highly adaptable to expansion."

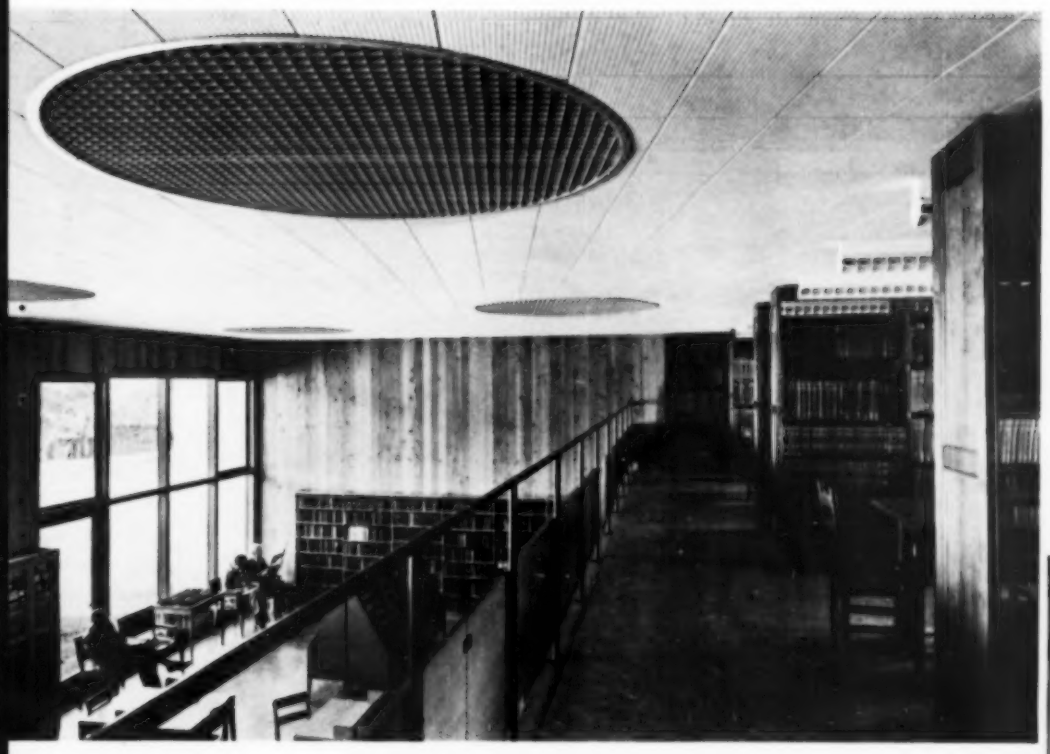
public library

As mentioned previously, the structure combines concrete-pier framing and steel for the roof frame or wherever else (as in the mezzanine stack area) wide unobstructed spans were desired. The roofing is of wood shakes—a bow to Monterey tradition. Inside, floors are generally of rubber tile, though some areas (meeting hall, work room, etc.) are simply waxed, integrally colored concrete; asphalt tile over wood planking is the mezzanine flooring.

Interior walls are surfaced with cedar boarding, and ceilings of all public rooms are of perforated acoustic tile. While a variety of artificial light fixtures is used in the smaller rooms, lighting of main rooms comes from a series of 6-ft diameter, round ceiling recesses filled with continuous fluorescent strips and screened with louvers. The stack lighting is also fluorescent, while incandescent units of several types are used in minor rooms.

For sound control, many walls have a sound-insulating blanket between double studding, and the music-listening booths have a special combination of acoustic-tile ceilings, solid fiberboard wall insulation and sound-blanket insulation. Wood sash is used throughout, with 3/16 in. sheet glazing. The major heating derives from a floor-panel system, using wrought-iron piping, but for the mezzanine and main individual rooms, a down-diffusion heating and ventilating system is used, to prevent overheating. A few small rooms on the mezzanine have baseboard convectors.

Public reactions to the new library have been varied. Librarian Ethel M. Solliday tells us, "ranging from whole-hearted approval to mild disapproval. Some people feel the building is 'too extreme' or 'raw' because of the natural-wood walls and exposed-steel beams. One of the most frequent comments has been that 'it doesn't look like a library,' usually accompanied by an expression of approval. Generally speaking, people like the lightness achieved by the natural-wood walls, the high ceiling, numerous windows, and feeling of spaciousness. The exposed-steel beams have excited the most comment, and again most people have reacted favorably, although some have made suggestions for covering the long beam with murals, carved wood panels, etc.! Staff reaction is, of course, favorable. After many years of working in crowded drafty quarters, we are especially appreciative of the adequate work areas and the uniform temperature provided by the radiant floor heat."



The warm tones of the cedar-board walls and neutral, tan-gray of the rubber-tile flooring set the muted color scheme of the interior. As a foil, the major steel beams are painted bright tile-red, while cross-beams under the mezzanine (right) are bright blue. Acoustic-tile ceiling is off-white.

(SELECTED DETAIL, mezzanine railing, page 143)

public library

The small meeting hall (top) has glazed doors opening to the future reading court; the room serves various local groups as well as library needs. The Librarian's office (bottom) is separated from the entrance lobby by an outer office, the obscured-glass wall of which appears at left.

planning for human welfare

The architect can make no pretense of taking the place of the doctor, surgeon, psychiatrist, or social worker in coping with personal misfortunes and disabilities. Yet, as even the few buildings on following pages clearly demonstrate, architecture often can and does soften the blow of the misfortune, makes it easier to bear, and even specifically furthers essential therapy or procedures. Most persons have no remote conception of how many there are in this country who must endure physical disability, lack home care, or are otherwise in need of outside assistance. If architecture provides only its modest share of help, it will be a surprisingly large contribution. In a stunning report prepared for this issue by Irwin Luckman, designer of the house for a paraplegic veteran (p. 89), it is estimated that "there are about 25,000,000 disabled persons in the nation, of whom about 5,000,000 are severely and permanently handicapped." No exact figures exist, but these incredible totals are averages derived from recent, official estimates.

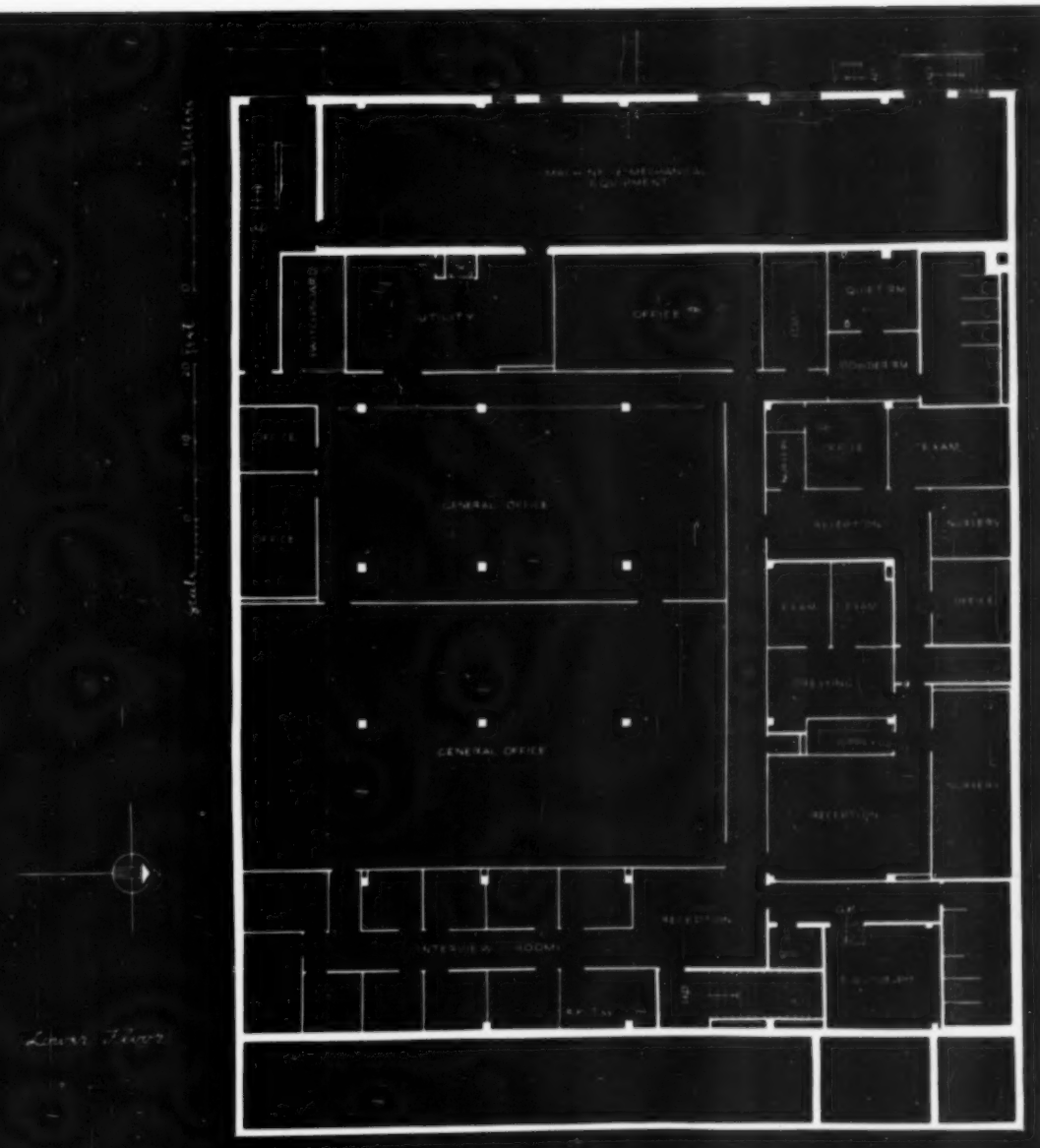
In approaching the design of a building for the handicapped, Luckman recommends that the architect "seek out and exploit those abilities the person still possesses. He may learn—and be able to show the disabled person—that common acts assumed to be done in only one way, can be performed through the substitution of other faculties." Discussing in particular an individual with orthopedic impairment, Luckman further suggests that the architect "should not be content to design for the abnormal requirements of the wheelchair or other prosthetic device, but must design instead for the abnormal requirements of the *person*. He should seek wherever possible to make the prosthetic device unnecessary. His goals should be: maximum performance; maximum therapy; maximum pleasure." Obstacles to success include "the limitation of the disablement itself" and "the disabled person who specifies that he does not want any special features that might look unusual and point up the abnormality." Such problems—and the families involved are frequently the ones to introduce them —"may be modified if the architect can make it apparent that only an unorthodox solution to the unorthodox requirements can radically improve ability to perform." Financial lack will very often be the stumbling block to thwart the wish and possibility of working out a helpful solution, Luckman also points out. His discussion specifically concerns the design of a private house for a particular person with a special and definable disability. A parallel though somewhat different problem is the design of the institution or group-use structure where persons with a common difficulty, but with widely varying degrees of deficiency, are to be accommodated. Here no such precise solution can be worked out as is possible for an individual. But workable compromises can be developed.

In this study, we show buildings for the use of welfare agencies; an infirmary for orphaned children; a school and home for deviate youth; a training and recreational building for the blind; a dormitory for deaf children; and, in addition, Luckman's remarkable proposal for a house for a paraplegic.

administration building

client	Children's Home and Aid Society
location	Chicago, Illinois
architects-engineers	Skidmore, Owings & Merrill
general contractor	R. C. Wieboldt Company

Headquarters for one of the oldest and largest privately supported, nonsectarian child-welfare agencies in the country (caring for some 1,800 children annually), this building also houses offices for casework interviews and medical and psychiatric clinics for examination and—if needed—treatment. The agency does not provide resident facilities; rather, it conducts an outpatient service that works to improve existing home conditions or find good new homes for underprivileged or homeless children. In designing the building, which won a 1952

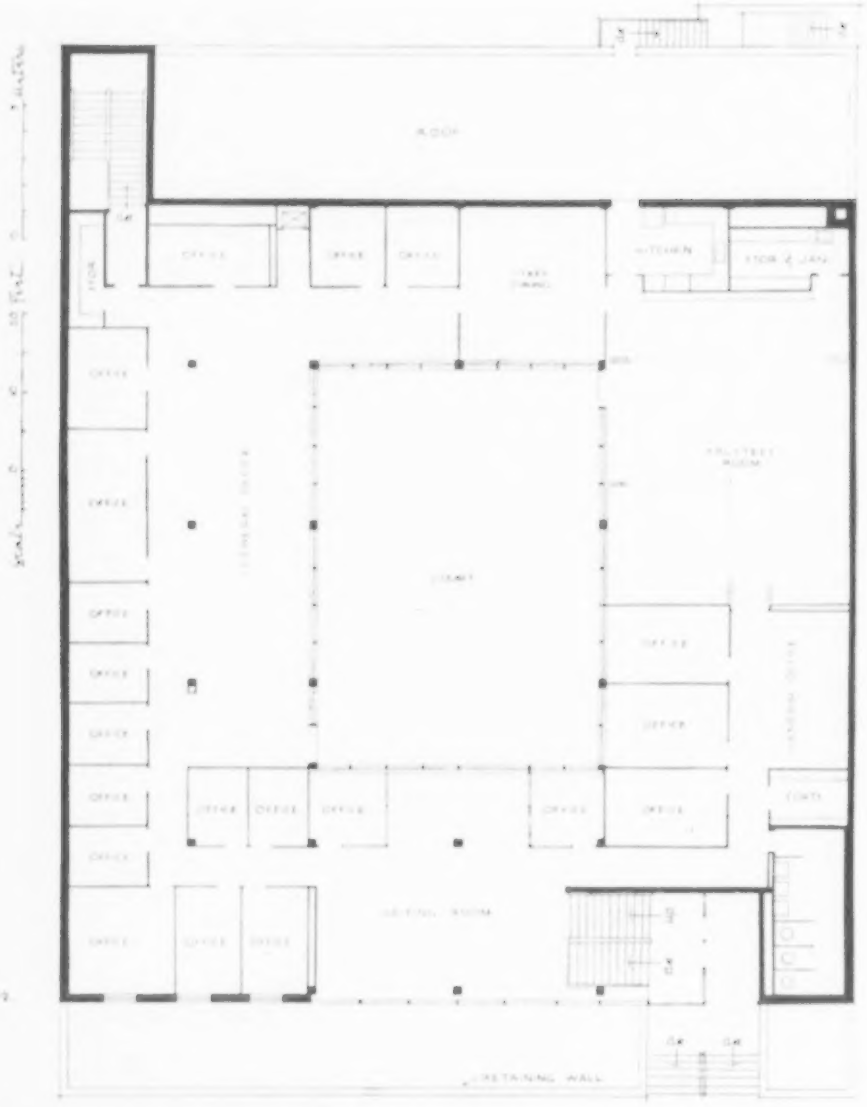


Honor Award from the Chicago Chapter, A.I.A., the architects consciously strove to develop a character that would be friendly, nonimposing, and noninstitutional.

The plan is organized on two floors, with the building entrance at an intermediate level. This depression of the lower floor assists in giving the structure its long, low, quasi-residential appearance. On the lower level, in addition to mechanical and utility rooms, there is general office space, the interview suite, and the medical and psychiatric clinics. The upper level, built around a central brick-paved court, includes main waiting room, administrative offices, general offices, a trustees' room, and staff-dining facilities.

A reinforced-concrete skeleton structure, the building has long-span roof panels poured of lightweight concrete, with glass fiber used as insulation. Exterior walls are of long, narrow Roman brick; floor-to-roof areas of glass occur both around the courtyard and at the main entrance (SELECTED DETAIL, *p. 141*). Plaster is the main interior wall finish, but to create a spacious feeling, obscured glass is used in places where noise control or privacy were not prime considerations. Throughout the building, ceilings have an acoustical-plaster finish, and in the clinics, the walls also are acoustically treated. At the entrance and on stairs, terrazzo is the flooring; asphalt tile is used elsewhere. Trim and stair rails are stainless steel. Light units are both fluorescent and incandescent. The heating system is forced air, so installed that air conditioning may be added later.

Photo: Torkel Korling



Main Floor

In the trustees' room (left), folding leatherette partitions permit division into three smaller meeting rooms. The waiting room (across page) is 11 steps up from the entrance lobby. On the rear wall, a windowed niche looks out on the courtyard.

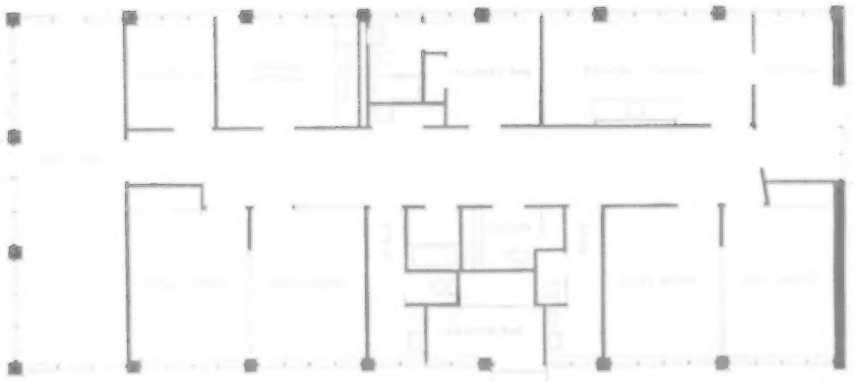
Photos: Hedrich-Blessing
Vortex Fisher

infirmary

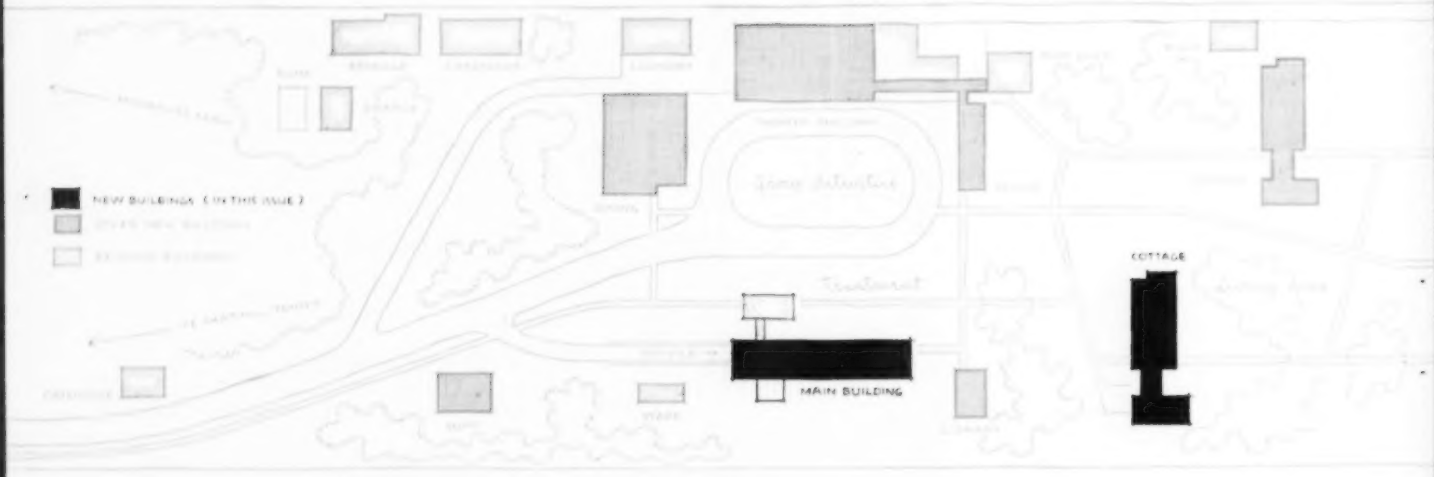
client	Baptist Orphanage
location	Philadelphia, Pennsylvania
architects	Carroll, Grisdale & Van Alen
structural engineer	William R. Sauter
mechanical-electrical engineer	A. Ernest D'Ambly
general contractor	R. M. Shoemaker Co., Inc.

This child-scaled little building was designed to provide care for children with routine illnesses, temporary quarters for the seriously ill awaiting transfer to a hospital, a medical-examination department, and a dental-treatment facility. Built on a concrete slab at grade, in a quiet section of the orphanage campus, the structure is framed with fireproofed-steel columns. Walls are brick; roof trusses, wood; roofing, slate. Entrance to the building is from the northeast, and ambulatory patients coming for examination or dental work never enter the infirmary portion. Patients' rooms are to the southeast or southwest, and a solarium (which can be used as additional bed space if needed) is across the southwest end. Corridor walls of patients' rooms have observation windows.

Minimum maintenance was a major program requirement. Hence, sash are aluminum; the soffit of the roof overhang consists of asbestos-cement panels screwed to the wood-roof trusses; downspouts and gutters are copper; and exterior doors are heavy wood, painted (the only exterior surfaces that require maintenance every two or three years). Asphalt tile is used for floors, and a rubber cove and base occur in every room except bath and utility rooms, which have tile floors and walls. Interior walls generally are of painted plaster. Hot water is the heat source, serving a radiant floor-slab system—a feature the staff finds particularly good in working with young children.



The engaging bronze bear beside the front entrance to the building, the work of Cornelia Van Alen Chapin, was designed to temper somewhat a child's concern about having a tooth pulled or being given a shot. The medical-dental room (right) *is on the northwest wall, just beyond the waiting room. If conditions require, the solarium* (below, right) *becomes additional patients' bed space. Between the boys' wards* (below, left) *is a clear-glass panel similar to the viewing windows in corridor walls.* Photos: Cortlandt V. D. Hubbard



home, school, and camp

client	Arden Shore Association
location	Lake Bluff, Illinois
architects engineers	Skidmore, Owings & Merrill
general contractor	R. C. Wieboldt Company

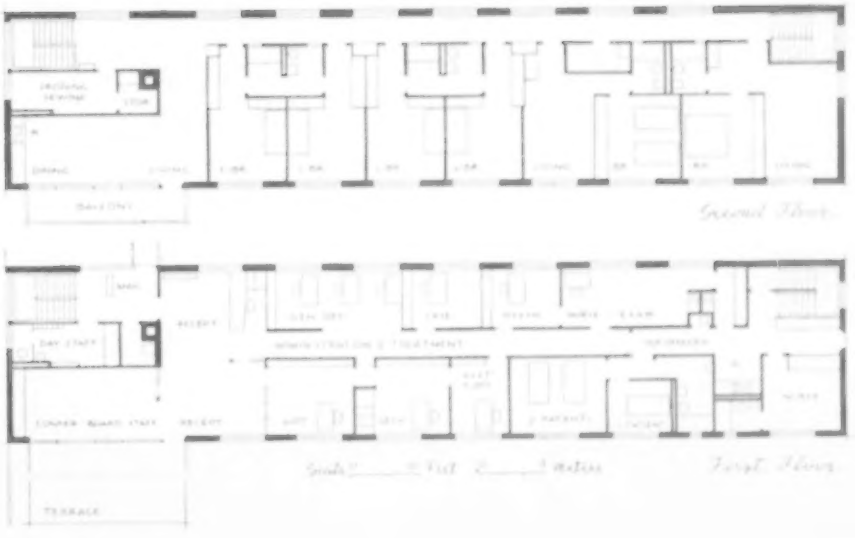
A home, school, and camp for deviate boys in the 9-to-17-year-old age group, this campus is licensed by the State of Illinois as a child-welfare agency. The facilities for living, training, and recreation accommodate 50 boys and a staff of 15. Built on a long, narrow, 16-acre wooded strip of land bordering Lake Michigan, approximately 40 miles north of Chicago, the group is currently made up of several old buildings (some of which will be removed later) and a few new buildings, two of which—the Main or Administration Building and a typical resident cottage—are shown here.

For the new buildings, the architects recommended construction of maintenance-free materials so far as possible, and a number of independent small buildings rather than one large institutional structure. On the ground floor of the Main Building shown on these two pages are a reception room, board- and staff-meeting room, and offices for superintendent and administrative staff. In the clinical area (also on the ground floor) are an examining room, space for visiting medical and psychiatric consultants, and a case worker's office. In addition, there is an infirmary with room for three patients and a private room and bath for the resident nurse. Upstairs are a suite for the superintendent; quarters for one married couple, and accommodation for four unmarried staff members, with a community living room and kitchenette at the southwest corner. A full basement contains the heating plant, general storage space, maintenance shops, and a temporary manual-training shop. The pavilion on the north facing the central green is the assembly point for students who take a bus to the local high school.

The building, constructed on a reinforced concrete foundation, has load-bearing masonry walls and concrete floor and roof slabs on open-web steel joists. Interior surfaces are concrete block or plaster; floorings are either asphalt tile or linoleum. The sash are aluminum, either fixed panels or casement units. At two-pipe steam-heating system is served from an oil-fired boiler.

General view of Main Building from the southwest; the balcony opens off the staff living-dining room. Placement of the buildings so far back from the lake-front saved much road-construction cost, minimized the snow removal problem, and in addition, makes "going to the beach" an occasion.

Photo: Torkel Korling



Each of the three housing units accommodates 16 boys, 8 (and a house parent) on each floor, in single or double bedrooms rather than dormitories. Equidistant from both floors is a living room for house meetings, games, and lounging, while beneath is a large crafts room, with a small kitchen that is used for snacks and Sunday suppers. The exterior fir siding is a facing for stressed-stud spandrel walls between red-brick bearing walls.

Exterior photos: Ezekiel Kurling
Interiors: Fred R. Dapster

planning for the handicapped

house for a paraplegic

The client's limited mobility included mechanical means (wheelchair; Canadian canes), with relatively little therapeutic value; and movement by hopping on hands across padded surfaces, or in an ordinary secretarial chair.

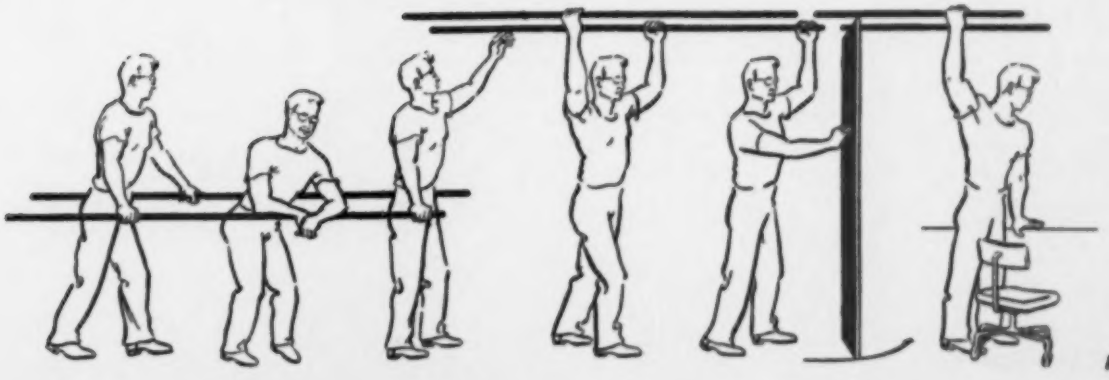
As outlined on page 79, the designer's approach to developing this house was to find ways to use the client's unimpaired abilities to provide maximum activity, maximum therapy, and maximum pleasure. When undergoing treatment at an institution, therapy is part of a routine; in the home, however, the individual must assume responsibility for continuing it. The usual dwelling rarely *invites* him to exercise; moreover its arrangement may even create physical barriers that stifle the motivation. So, this designer worked to see if he could create an environment in which ordinary, routine, and pleasant activities could be performed in such a way as *incidentally* to provide the necessary therapy.

This particular client was wounded in World War II leaving him with paraplegia, a spinal nerve injury that causes permanent lack of function and sensation in the lower extremities. He required regular exercise, and had excellent compensatory development of chest and arms as a result of therapy since his disability. Though he could use a wheelchair, which is comfortable and safe and even would be preferred when the man is tired or ill, the designer comments that "it is bulky, awkward to maneuver, and provides little therapy." The Canadian canes are less bulky and provide much freer movement, but "they are dangerous, require great effort, and since he must watch his feet, are extremely nerve-taxing and require poor posture"—however desirable and necessary they are for certain activities.

The fact of the man's delight in parallel-bar exercise, plus his unimpaired physical abilities, resulted in the ingenious design solution. The bars are stable, and the user is safe and at ease; he does not need to watch his feet; he can even relax on the bars when upright and go long distances without tiring. He can perform various exercises on them and feel a sense of accomplishment. Using only parallel bars, however, did not seem a feasible solution, since they would impede other people's movements about the house; there would be difficulty in transferring to chair or canes; and passage through doors seemed impossible.

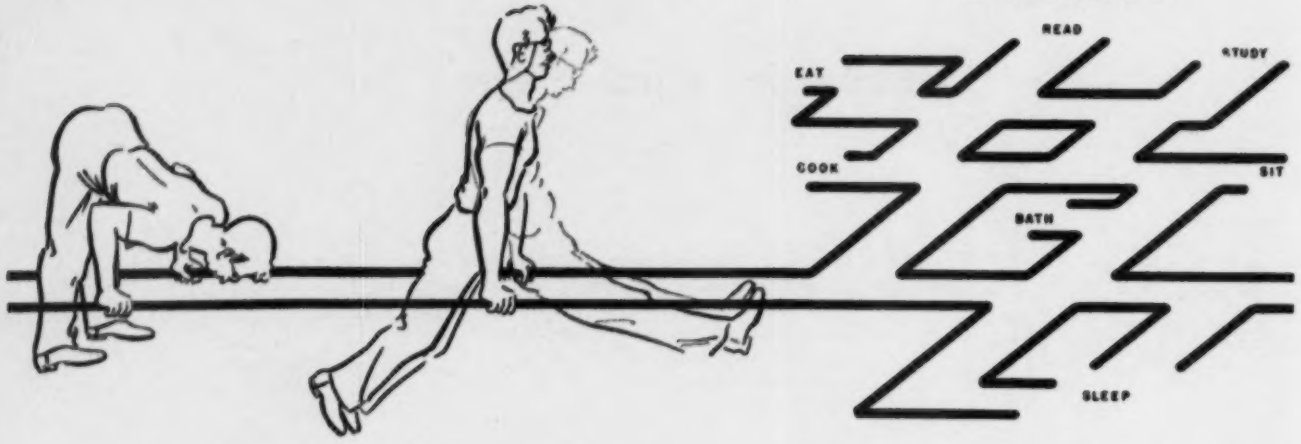
With a combination of parallel and overhead bars, however, the idea became more practicable. Where he would have to cross other circulation paths or pass through

He could also "walk" on parallel bars, providing excellent exercise, with gait and posture approximating normal. From this, plus the fact that he could easily switch from parallel to overhead bars, the designer worked out a major element of circulation in the house design. Sketches: Irwin Luckman



planning for the handicapped: house for a paraplegic

Exercise on bars (in this particular client's case) is of special therapeutic value and provides maximum mobility and maximum pleasure. By utilizing his unimpaired physical abilities, "the wheelchair and canes were entirely eliminated within the house, except as alternates when preferred."



doors, he could switch to overhead bars. To transfer from overhead bars to a seat, all he needed was a stable grip at an intermediate height. One limitation was that he could not stay on them as long as he could on parallel bars, without becoming fatigued. For even longer "walks," the designer proposes an additional series of bars outside the house.

Inasmuch as the client has use of some back muscles and can keep his balance, the secretarial chair proved an ideal solution for the time he would be sitting. By providing touch surfaces about four feet apart, wherever the chair would be used, he could "swim" between them readily, and with a speed and maneuverability not possible in the wheelchair.

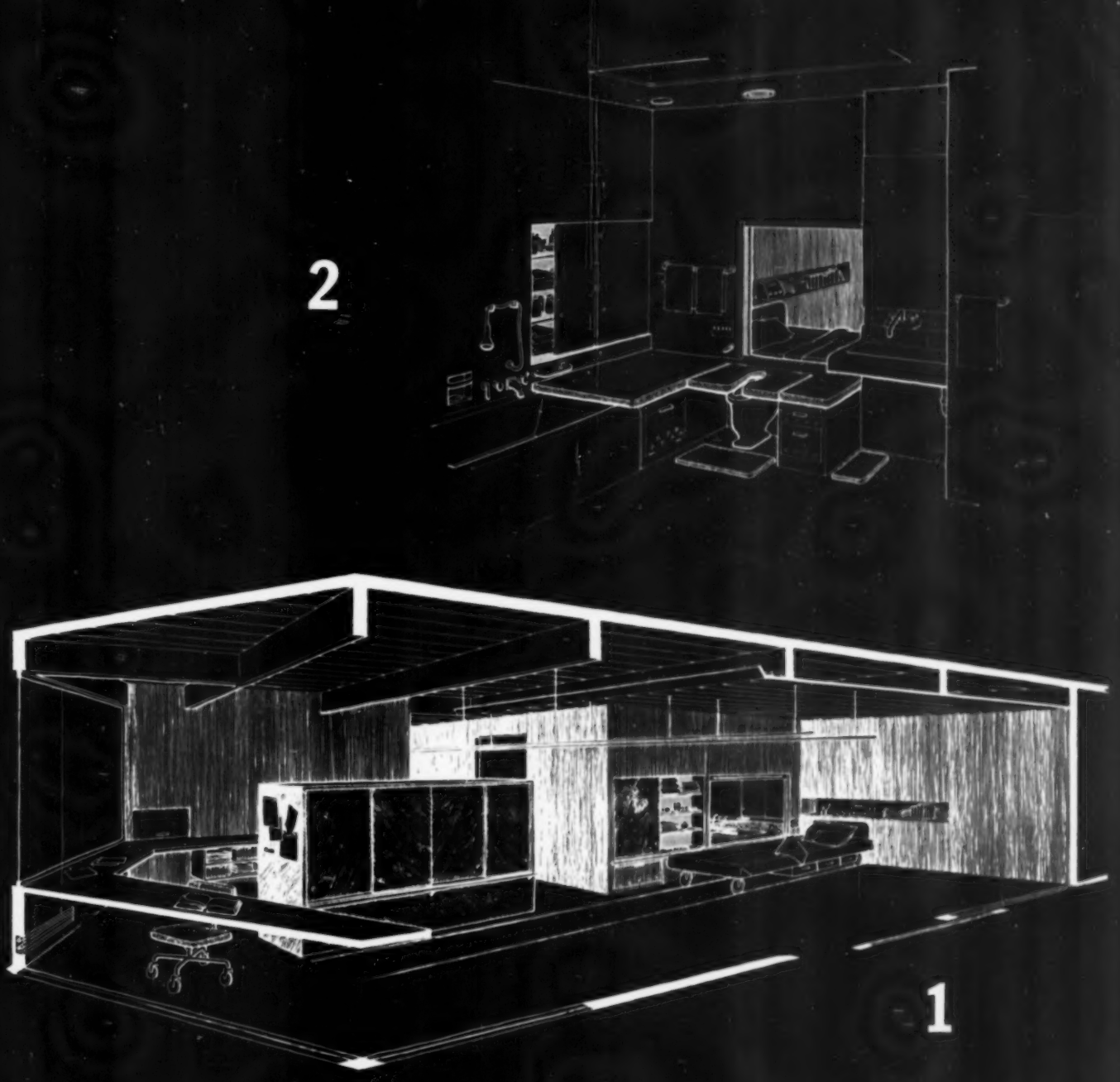
Special attention went into the design of the study-bedroom-bathroom area. As the designer points out, "when the client is in bed, he is stranded, without first putting on his braces, and then making the effortful and often dangerous transfer to some means of getting about. Just picture how difficult it is to get dressed in the morning, when he has to wash in the bathroom, gather his clothing from some other point, and get back on the bed in order to dress. Follow the further difficulty of using the toilet during the night when he is very sleepy, has to put on braces, transfer to the wheelchair, from that to a hard surface, and then follow the whole procedure in reverse—a difficult, dangerous, and quite obviously non-therapeutic effort." The idea of merging the bedroom and bathroom (*see drawings*) simplified the whole procedure. In the bathroom, closest to the bed, is the toilet bowl, its seat padded with foam rubber, and at the same height as the bed, allowing him to slide directly onto it. The padding extends to all other fixtures. By mounting the bed on ball-bearing wheels and tracks, he could pull himself, bed and all, by means of a wall-mounted bar. And with closets also brought down to bed height, he could reach his entire wardrobe without leaving the bed.

In conclusion, the designer finds his solution one "in which long-distance movements between activity groups were exploited (and even stretched) for their therapeutic value, always permitting alternate usage of wheelchair or canes, or free movement of the nondisabled; all localized activities were made as effortless as possible through elimination of unnecessary, non-therapeutic movements. By using the client's unimpaired physical abilities, it was possible to develop an entirely new pattern of performance of his living activities . . .

"Our desires are closely related to our ability to achieve them," Luckman observes. "Given new avenues of performance, the disabled will develop new and stronger desires. A new, higher level of performance, therapy, and pleasure—in fact, a new outlook on life can be given the disabled through architecture."

Overhead bars enter the bedroom-study (1); the bed rolls on tracks; the secretarial chair offers much additional freedom of movement. Alongside the bed, at bed height, is a pass opening, with soundproof, counterweighted door panel connecting through to the bathroom (2) where immediate surfaces are padded, and the client can maneuver himself to any of the facilities, including the bathtub, by hand hopping. To assist in dressing, closets are also at bed height (3) and reached by rolling the bed forward.

location	Oakland, California
designer	Irwin Luckman



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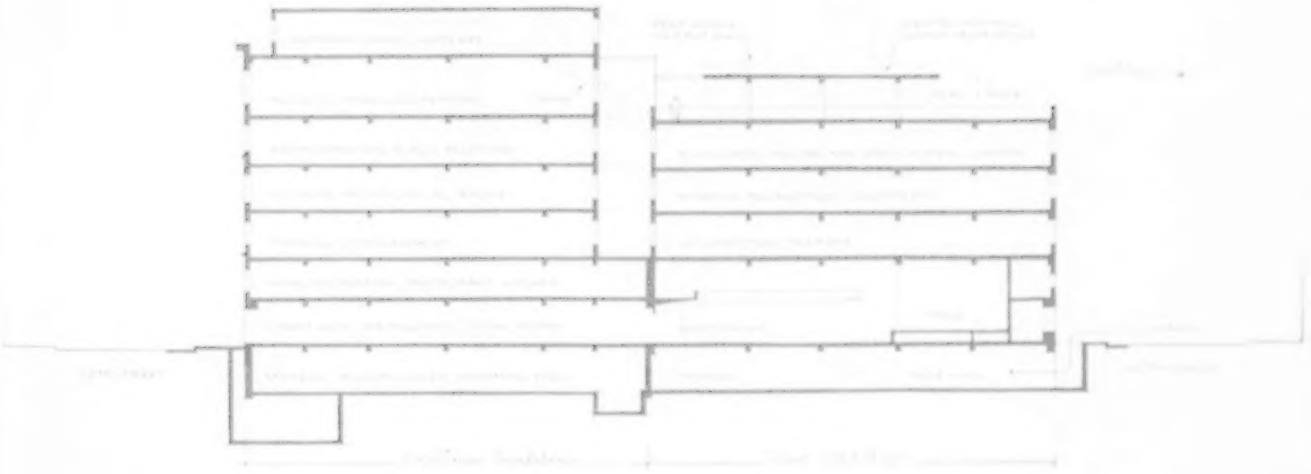
LOYDS
AIR CONDITIONED

training and recreation center for the blind



A five-story and basement addition to an old six-story structure that had seen long service, "The Lighthouse," which is a full block in depth, provides training and recreational facilities for some 4000 blind or partially sighted persons. It is also the administrative headquarters for The New York Association for the Blind. The old building was much remodeled and refurbished—and structural and mechanical provisions in the addition are sufficient to allow the addition of two more floors when the need arises and funds are available.

Planning for those with seeing defects, including the totally blind, has several specialized aspects that are not immediately apparent—an echo, perhaps, of the basic wish to keep everything as normal as possible. For example, one might think that the metal screeds in the sidewalk at entrances were merely decorative, but they also serve as warnings and guides when a cane or the foot touches them. Corridors throughout the building have linoleum wainscots five-feet high, since walking about is frequently guided by touch, and the linoleum is easily kept clean. Bordering the stairways, in addition to high mesh guards, there are continuous, sturdy handrails that have inset metal buttons to inform those who touch them that a landing is near and also which floor is being reached—three buttons for the third floor; four, for the fourth, etc. The long corridors that join the old and new parts of the building on all floors are equipped with shut-off doors; in case of fire, these passages constitute horizontal exits that are more readily maneuvered by a blind person than are stairways. At the front of the auditorium stage, a strip of corrugated-rubber matting warns actors that they are not far from the edge.

One of the most extraordinary provisions is a painstaking, preplanned use of color. Doors to important rooms are bright red, set in light-hued walls; doors to closets are a muted brown. Thus, those with partial sight find the entrances readily and know where they are bound. According to Dr. Philip S. Platt, Director of the Association, even the totally blind "by some subtle means, become aware of attractiveness or unattractiveness" of colors and their environment, and are affected by it.

The new building contains an uninterrupted play roof (35' x 100') for roller skating, dancing, and games; a music school; recital room; Braille press; Braille library; reading rooms; and psychological-guidance rooms; a whole floor devoted to occupational therapy—basket weaving, doormat making, sewing, etc.—and an auditorium that seats 350.

The old building has been remodeled to accommodate the nursery school, with its own play roof; and medical, social-service, and training departments, with offices for administration and job placement.

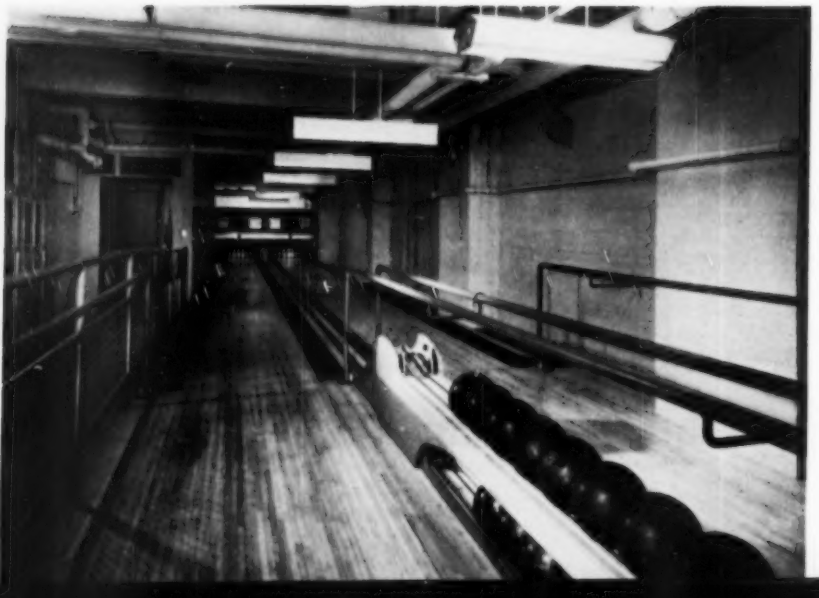
At street level, alongside the main entrance on the 59th Street front, is a modern, retail shop, where articles made by the blind are sold. The basement contains much-used bowling alleys, a swimming pool, and kennels for "seeing eye" dogs.

client	The New York Association for the Blind
architects	Clay, Potter & Coulter
structural engineers	Severud-Elstad-Krueger
mechanical-electrical engineer	Harry Bond
general contractor	Fuller Construction Company

The basket-weaving room (left) is typical of all worktrooms; doors to cupboards slide, avoiding undesirable projections; coat hangers are fastened to the clothes poles.

In corridors (below, left), viewing windows permit supervision of workrooms without interruption. There is linoleum wainscot to a point above line of hands; also door recesses that allow them to open without interrupting the hall space.

Photos: Ben Schnall



Roof view (above) is taken from the nursery-school play roof, looking down on the adult roof of the new addition; high mesh guard fences provide reassuring protection.

In bowling alleys (left) guardrails and handrails help make play possible, with minimum risk.

dormitory for deaf children

client	Michigan School for the Deaf
location	Flint, Michigan
architects	O'Dell, Hewlett & Luckenbach
engineers	E. R. Little Co., Inc.
general contractor	Couse & Westphal

The spreadout building accommodates 140 young children with hearing defects, including total deafness. From a play porch at the end of the nursery wing (above) are seen the two-story dormitory block, main entrance, and windowed recreation room for the boys. At the southeast end of the building (below) a balcony adjoins the living-study of one of the upstairs dormitories.

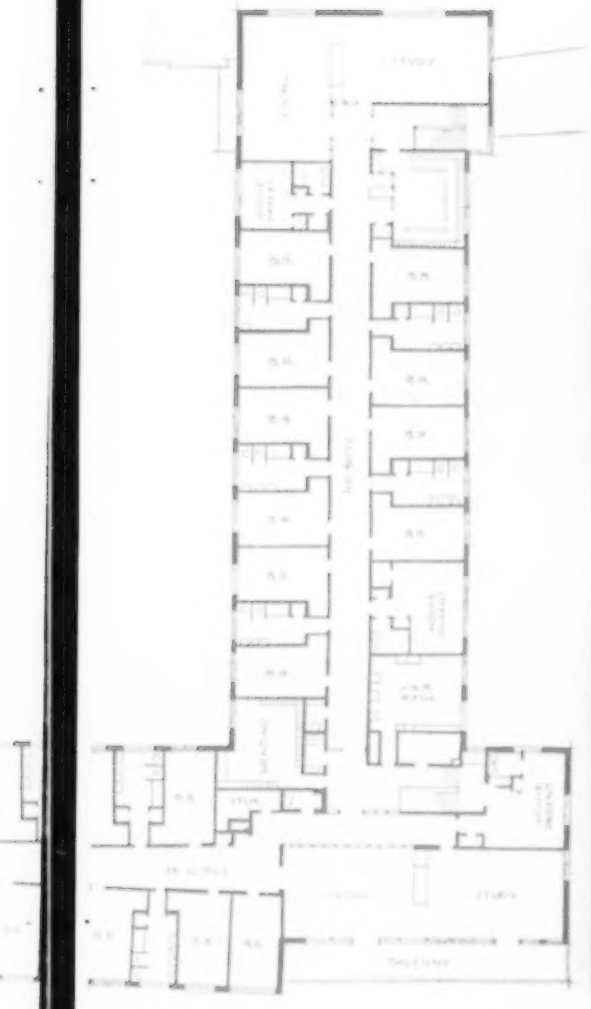
Photos: Florence Dyer

Built on the campus of the Michigan School for the Deaf, this dormitory is for children in the 8- to 12-year age group. The name is somewhat a misnomer, since the children range from the totally deaf to those with partial hearing more often referred to as "hard of hearing." Hence certain elements are introduced, such as special acoustic treatment, that are of particular benefit to those with some degree of hearing. In addition to the dormitories, there is a nursery where mothers of hard-of-hearing or deaf children come and attend classes to study care of those with hearing deficiencies.

The building is placed with regard to a developing campus plan near the classroom building, the service building (where the school dining room is located), and the administration unit. Choice of orientation was determined by the wish to provide maximum sunlight and also to take advantage of a pleasant view to the southeast. The south unit of the building contains (on the ground floor) the nursery school and

girls' recreational facilities; in the center section is a dormitory for 36 of the youngest boys, with living room, study, and suite for a house parent; in the rear wing is another dormitory for 28 boys. Older children are accommodated in two dormitories on the second floor—the one to the south for 36 girls; the other for 40 boys.

Since many hard-of-hearing children are extremely sensitive to sound vibrations, a loud noise even causing genuine distress or pain in certain cases, special acoustic plaster is used on all ceilings. In the dormitory living rooms are adjustable hearing aids, so that many of the children can enjoy recordings or broadcasts. Since nonhearing children are also very sensitive to lights, a flashing light, controlled from the house parent's suite, is used in each bedroom for waking the children in the morning.



The well-bearing structure has steel floor and roof joists and concrete slabs 3½" thick to accommodate radiant heating coils—an advantageous heating system where residents are so likely to sit on the floor as anywhere else. While asphalt tile is the flooring in general, wood is used in certain areas to accelerate sound vibrations from musical instruments, making it possible for the children to follow rhythm for dancing. Incandescent light fixtures are used in bedrooms (left), while both incandescent and fluorescent units occur in living rooms (above).

TWO RESIDENTIAL ROOF SYSTEMS

Corrugated, reinforcing-steel panels serve as forms for lightweight-concrete roof and floor slabs as well as exposed ceilings in the Hutchinson house at Glendale, Missouri; Architects: Fischer & Campbell Associates, Kirkwood, Missouri.

Although the Cofar system of reinforced-concrete floor-and-roof construction (developed by the Granco Steel Products Company, St. Louis, Missouri) has already been used extensively in commercial buildings,* the application of this type of concrete-slab construction as a structural and decorative element in residential construction is relatively new. A recent example employing this method is found in the Hutchinson home at Glendale, Missouri, designed by Fischer & Campbell Associates. The exposed undersides of the second floor and roof are corrugated, reinforcing-steel panels over which a light-aggregate insulating concrete has been poured. In this home, the panels were left exposed and painted in order to show the corrugated-ceiling pattern. Had the designers preferred, however, suspended lightweight-plaster ceilings easily could have been added. The exposed areas of the corrugated steel required no special paint, as the sheets were delivered to the job vinyl-primed for field painting.

Cofar, using very high-strength economical cold-rolled steel, provides a positive reinforcement with maximum allowable unit stress for one-way concrete slabs and a deep-corrugated steel form with allowable flexural unit stress for wet-concrete and construction loads. Thus, conventional positive reinforcement bars, temperature steel, and wood forms are eliminated and a substantial economy can be realized. No additional steel is needed and there is no reduction of design stresses, although a high safety margin is obtained.

The Cofar panels are crossed with transverse wires, welded across the corrugations in manufacture. These wires, not over 6 in. center-to-center, provide temperature reinforcement, mechanical anchorage, and shear transfer from the concrete to the Cofar. Hot-dip heavy galvanizing insures building-life permanence.

The roof of the Hutchinson house, supported by 3″ x 6″ wood joists 6 ft on center and resting on 4″ x 14″ wood beams, has a maximum slope of 4 to 12. The second floor slab, $3\frac{1}{2}$″ thick from bottom of corrugations to finish floor, is supported by 10 I 35's spaced 8 ft apart and a masonry wall at the back of the house.

* *860 Lake Shore Drive apartments by Mies van der Rohe, Chicago; Corrigan Tower and Fidelity Union Building by Wyatt C. Hendrick, Dallas.*

For a residence on Fishers Island, New York, a one-level structure topped with a low-pitched white roof seemed best suited for the requirements of the client's family, the site, and the regional climatology (Long Island Sound). As only an air space was needed above the ceiling, ample storage having been provided at ground level, a 4 to 12 slope efficiently accommodated the dimensions of the floor plan. Such a slope excluded a shingle-type roof (6 to 12 is usually considered minimum) and offered an opportunity for another type of construction. To Ed Thatcher's way of thinking, a plywood roof system was the logical solution for this house.

His original design called for $\frac{5}{8}$" exterior grade Douglas Fir plywood over 2" x 8" rafters; 24" cedar shingles to be used as wedging at each bearing. As the home was actually roofed, however, $\frac{3}{8}$" plywood panels were laid over $\frac{5}{8}$" plywood sheathing and wedges (*see details below*). This revision was made at the request of the general contractor who supported his semiskilled carpenters in their contention that seasonal spring winds would require a platform to work on. (This compromise was accepted ungrudgingly by the architect as his contractor agreed to furnish the additional material at no extra cost; however, Thatcher states that if he again had to design a roof for similar conditions, he would adopt his original scheme.) The 12" overlap was dictated by the architect's own judgment. As an added safety precaution, a bead of calking was spread under the edge of each plywood panel (in about 1 in.) so that any opening that might have existed after nailing would be sealed. Jointing for most panels was similar to that shown for the ridge members (*shown below*). To avoid staining the white roof, which assists reflection of summer heat, Monel metal flashing was specified. All cutting was performed at ground level and the laying of the 4" x 8" panels began at the eaves, proceeding up the slope. Roofing time was less than four days for the crew of two relatively unskilled men.

Although two coats of titanium exterior paint were applied to the major areas of the roof, an extra coat was added to the exposed edges of the plywood panels. Today, after three years' exposure, examination shows that no part of the roof is in need of further painting.

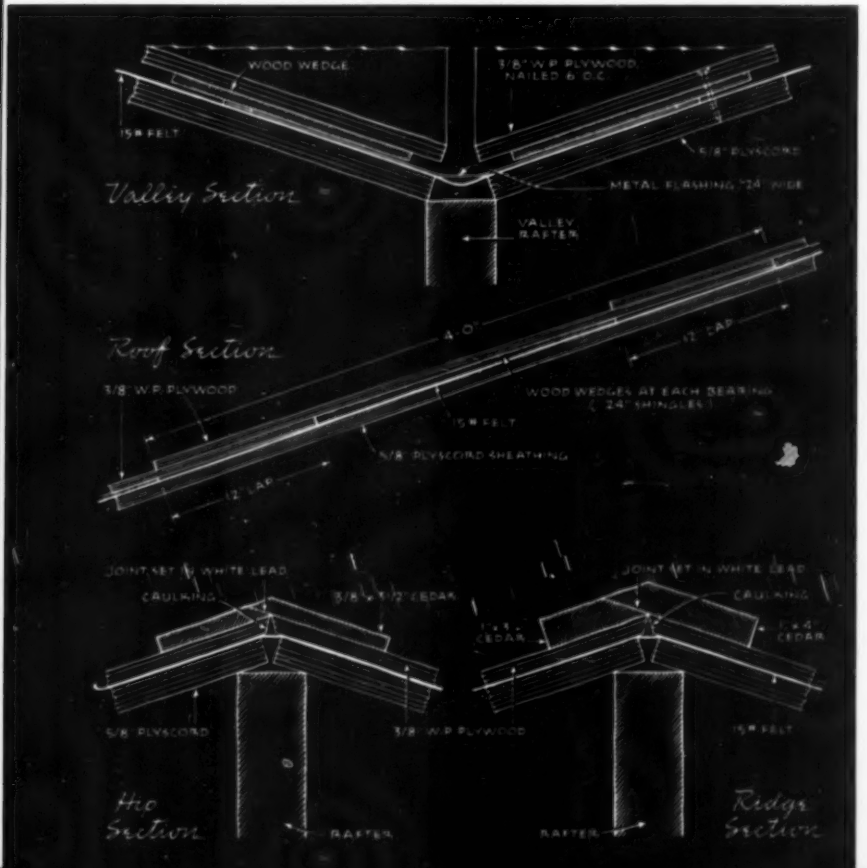
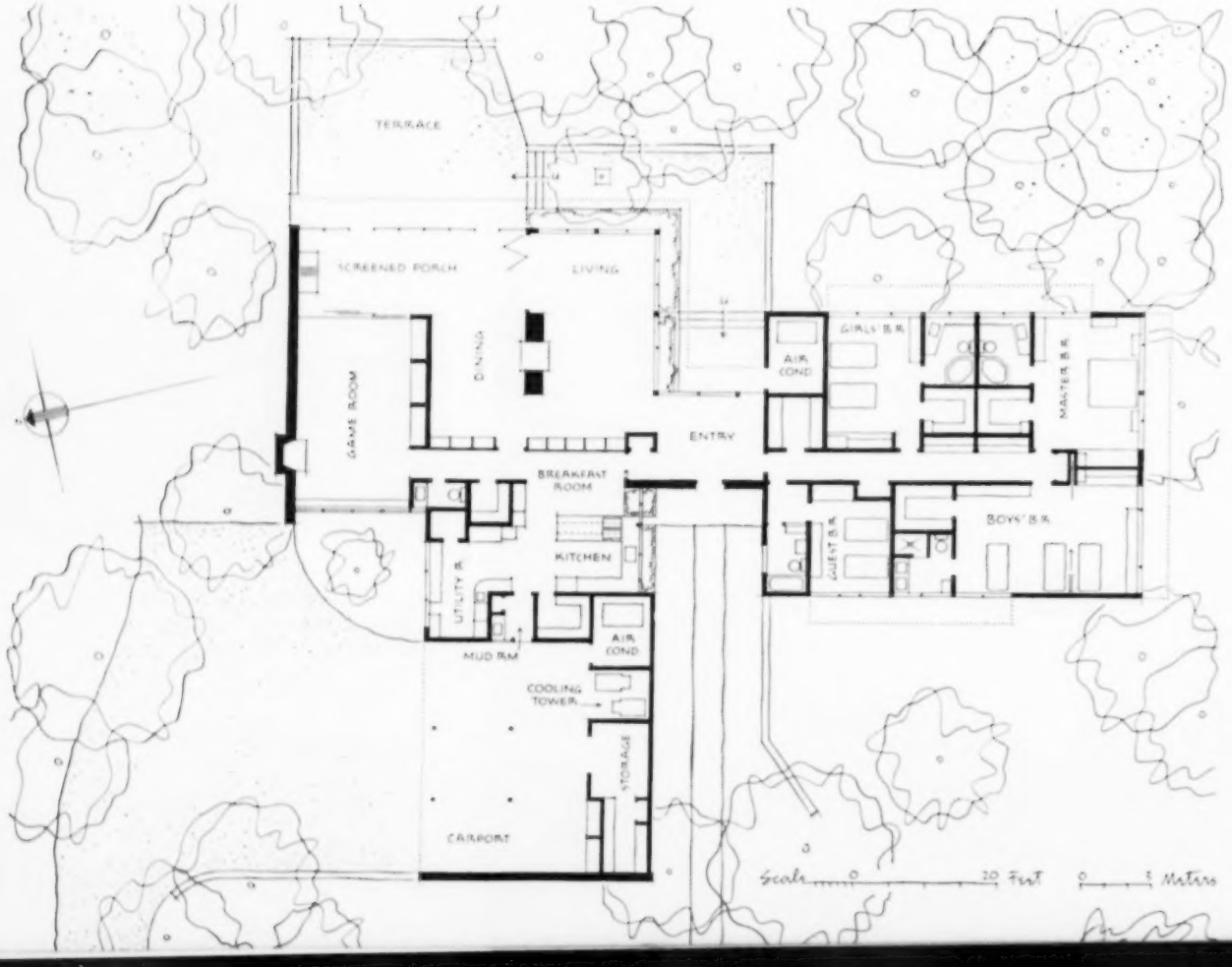


Photo of typical ridge, hip, and valley of plywood roof for residence on Fisher's Island, New York (above). Architect: Edwin D. Thatcher, New York. Detail drawings (left).

House: Dallas, Texas

architects	Fehr & Granger
consulting engineers	Wilson & Cottingham
general contractor	Charles V. Sumner



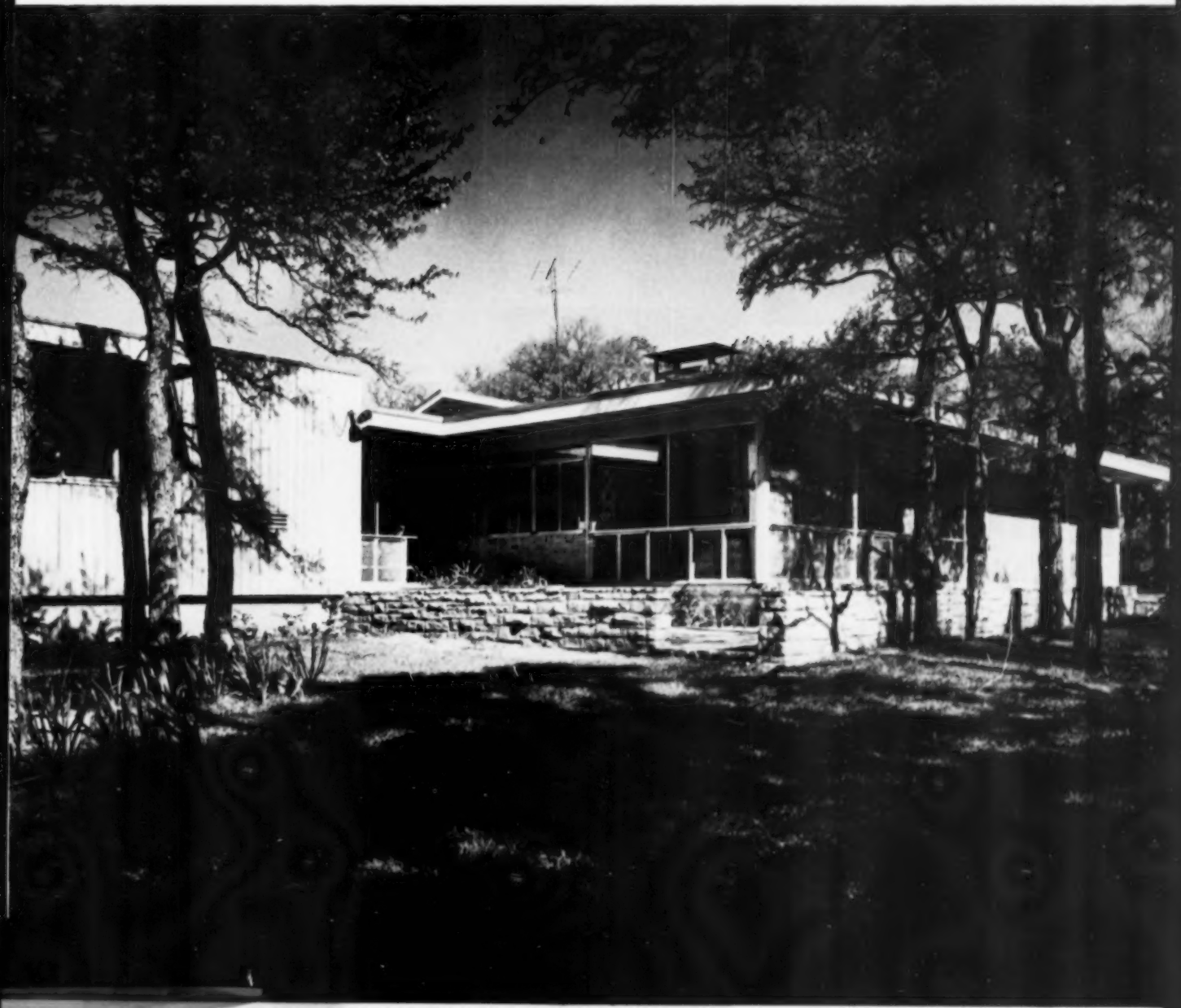
An exceptionally commodious home for a family consisting of parents, three sons, and a daughter, this house is set well back from the street on a live-oak-wooded site that slopes gently down to a creek—about 100 feet west at the rear of the property. The architects tell us that design of this house constituted one of those ideal architect-client relationships wherein the owners "knew in general their space requirements and simply advised us that they wanted us to design a house to fill those space needs. At no time did they impose any preconceived likes and dislikes. Any shortcomings in design must be laid at our doorstep."

An important aspect of the design problem was that the family enjoys all sorts of group activities, but at the same time each has highly individual interests. A by-product of this is that there are at least three areas provided for dining—the main dining room, a table on the screened porch near the barbecue, and a breakfast room at one end of the kitchen. Further functional requirements were that the house be designed so that it would require a minimum of housework and could be maintained without servants. A very special problem was the family's allergies to dust and pollen, resulting in year-round air conditioning zoned for economy of operation.

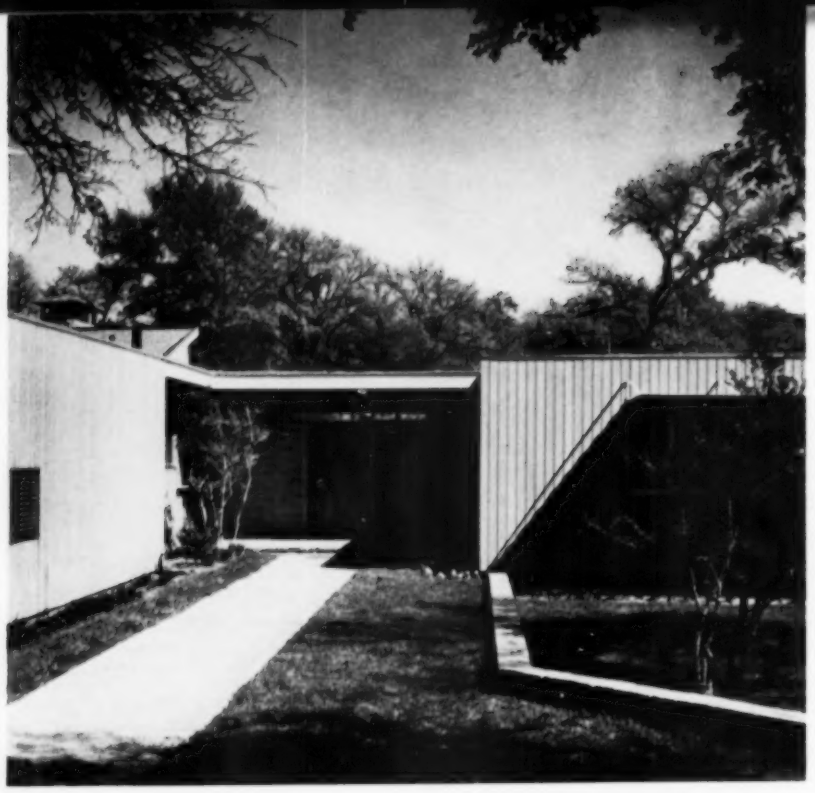
Basic plan solution is a two-part scheme with bedrooms and baths in one unit; living and dining areas in another; and as a connecting link, the central entry. In the bedroom wing, each of the bedrooms has its own bath. The room for the three boys is a large dormitory-like affair, but a folding partition allows the youngest his independence from the older brothers. All except the guest bedroom have both wall and walk-in closets, and off the bedroom corridor is an unusually spacious walk-in storage room.

The living portion of the house is flexibly organized, with rooms flowing into one another in such a way that areas may be separately used by adults and children, or the whole area joined for group entertaining.

The house has a waterproofed, reinforced-concrete floor slab on compacted fill, with continuous, concrete grade beams. Exterior walls are either standard stud frame with plywood sheathing and vertical redwood siding, or solid local masonry, with the stone exposed inside the house. The roof is framed with wood joists, with plywood decking and built-up tar-and-gravel surface.



House: Dallas, Texas



The front door (right) is set in a masonry wall, with clerestory strip above; on the living side of the house (below) this connecting-link entry has a solid door, but floor-to-ceiling glazing (see cover).

Photos: Gottscho-Schleisner

A passage from the flagstone-floored entry (right) gives independent access back to the kitchen and game room; at right of this storage-wall partition is glimpsed the fireplace of the living room, where vinyl-cork flooring is used.

The living room (above) has window walls facing the terrace—fixed glass in upper partitions; operable screened casements below. On the other side of the two-way fireplace is the main dining room (right), also with a vinyl-cork floor. Both rooms open onto the screened barbecue porch.

House: Dallas, Texas

Fold-back glazed doors join the living room and the marble-floored, barbecue dining porch (right). Along the left-hand wall of the latter, sliding doors connect with the game room (INTERIOR DESIGN DATA, March 1953). *The kitchen-utility-breakfast-room complex (two photos below) is handsomely equipped, including a drinking-water cooler and such conveniences as a grocery-store push cart for distribution of linens. The cooking equipment occurs in a projecting unit, with ceiling-hung cabinets above.*

construction

Foundation, floor, framing: reinforced-concrete foundation and floor: reinforced concrete—Trinity Portland Cement Division, General Portland Cement Company; stone bearing walls: Douglas-fir wall and roof framing. **Wall surfacing:** exterior: redwood siding; interior: birch and walnut plywood—U. S. Mengel Plywoods, Incorporated; gypsum board—United States Gypsum Company; bathroom wall paper—Katzenbach & Warren Incorporated. **Floor surfacing:** vinyl-cork flooring—Dodge Cork Company, Incorporated; marble floors in bathrooms—Vermont Marble Company; flagstone porch flooring. **Ceiling surfacing:** birch plywood—U. S. Mengel Plywoods Incorporated; gypsum board—United States Gypsum Company; acoustical tile—Owens-Corning Fiberglas Corporation. **Roof surfacing:** built-up roofing. **Waterproofing and dampproofing:** waterproofing—Anti-Hydro Waterproofing Company. **Insulation:** thermal: insulating wool—United States Gypsum Company. **Roof drainage:** galvanized-iron scuppers and downspouts. **Windows:** aluminum casement windows—A. B. C. Window Company; sealed double glazing and plate glass—Libbey-Owens-Ford Glass Company. **Doors:** birch slab interior—U. S. Mengel Plywoods, Incorporated; custom aluminum doors—Hill Welding & Metal

The owners' bedroom (above) occupies a corner location, with windows on both east and south walls. The room for the three boys (left) is equipped with a folding partition for partial separation.

Works. **Hardware:** lock sets—Schlage Lock Company. **Paint and stain:** exterior: bleaching oil—Samuel Cabot Incorporated; interior: flat oil paints, varnish—Pratt & Lambert Inc.

equipment

Kitchen and laundry: clothes washer and drier—Westinghouse Electric Corporation; range, griddle, ovens—Thermador Electric Manufacturing Company; dishwasher—General Electric Company; garbage-disposal unit—Given Manufacturing Company. **Lighting fixtures:** recessed domes, luminaires, and lamps—Kurt Versen Company; downlights and adjustable wall fixtures—Gotham Lighting Corporation. **Plumbing and sanitation:** water closets, water heater, lavatories—Crane Company; bathtubs—American Radiator & Standard Sanitary Corporation; toilet seats—C. F. Church Manufacturing Company; chrome accessories—Hall-Mack Company; medicine cabinets—Miami Cabinet Division, Philip Carey Manufacturing Company. **Heating and air conditioning:** year-round air-conditioning system—Worthington Pump & Machinery Corporation; grills—Barber-Colman Company; gas-fired hot water boiler—L. J. Mueller Furnace Company; temperature controls—Minneapolis-Honeywell Regulator Company; induced-draft cooling tower.

NEW DIRECTIONS IN THERMAL INSULATION, Part III:*

by Groff Conklin

Walls

It was stated in the second installment of this article (*March 1953 P/A*) that, according to a survey by the Housing and Home Finance Agency made in 1950, fewer than seven percent of the new single-family detached FHA houses built in the hot-climate regions of the United States had insulation of any type in their walls. Is this an indication of the fact that (at least in the non-air-conditioned house) wall insulation is of relatively small value?

As a matter of fact, quite the opposite is true. Any wall construction that will keep a sizable amount of heat out of the structure is worth while in hot climates and insulating materials do just that. Dean W. R. Woolrich of the University of Texas makes the point that in hot climates it is essential that the interior surface temperature of walls be kept well below the normal temperature of the human skin, for if the wall surface approaches the average skin surface temperature of the occupants—83 F—people in the room suffer because their bodies cannot lose heat by radiation to the walls. Even if the air is kept moderately cool by ventilation, the hot walls will make the room's occupants very uncomfortable. And in hot climates interior wall temperatures, especially if the wall is a typical thin-frame construction or even with a brick veneer, can easily rise into the discomfort zone on typical hot days.

At a "Correlation Conference on Housing and Building in Hot-Humid and Hot-Dry Climates" held in Washington, D. C., by the Building Research Advisory Board of the National Research Council, November 18-19, 1952, mention was made of the fact that, at least in the case of the more expensive home, a possible solution, particularly in hot-dry climates, is for the first floor to be built of thick masonry and the second floor to be built of frame. During the day it will be relatively cool on the first floor and at night the lightly-built second floor will be cool.

However, since massive masonry walls are not economically feasible in most parts of the country for the average home, insulation must provide the barrier to heat in such homes, just as in roofs. It is a sound investment in comfort wherever climates are hot and a genuine long-term economy if air conditioning is to be used. In the latter case wall insulation is essential to keep operating costs of the air-cooling unit from running much too high.

Due to the curious behavior of reflective insulations, which are most efficient in reducing downward heat flow but not as effective for upward or horizontal heat flow, they are of no greater value than the fibrous or cellular materials.

There is a rather novel way of increasing the hot-climate effectiveness of wall insulation that was developed for certain factories built in the South during World War II; this method can also be applied to residential design today (*Figure 1*). This is the provision of vertical ventilation between the outer layer of wall material and the insulation. Since hot air rises, a considerable amount of air motion will occur if one merely leaves openings at the bottoms and the tops of the wall through which the heated air can rise and escape.

Unfortunately, no reliable test data on the value of this sort of wall ventilation for homes is available. However, the technique should be a very usable one in hot-climate homes, provided care is taken to prevent the entry of insects and small animals into the space by screening the vents top and bottom.

Openings

With the exception of the most primitive dwelling, no common type of home is completely windowless. There are nearly always wall openings to admit light and (in hot climates) air currents, and to permit the evacuation of stale air and unpleasant odors from inside the structure (*Figure 2*). Even in air-conditioned homes, where the windows are closed tightly during the operation of the cooling unit, they are still essential for the admission of light and for the exchange of fresh air during the hours when the outdoor air is cooler and the air conditioner is turned off. In addition, windows are important in that they satisfy basic psychological needs of man, who hates to feel hemmed in and whose eyes need a change of focus at times from near-by to far off, which can be best obtained by looking out of windows at views and distant landscapes.

In non-air-conditioned houses particularly, too many openings and poor opening design and placement can have very harmful effects upon human comfort; in air-cooled buildings these defects can add appreciably to the cost of operating the cooling equipment. The number of window-placement factors that can be mishandled by those unfamiliar with hot-climate design is surprisingly large. Windows and fixed-glass areas can be too openly exposed to the sun's heat, incorrectly shaded, wrongly placed in the building, ineffectively glazed, and too big[1]. It is true that special sun-control devices of a wide variety are available, but in many instances they are costly and good building design often could reduce the expense of these necessary items.

The more important factors to be considered in designing openings for homes in hot climates are as follows:

(1) Orientation is basic. Whenever possible, the wall with the largest openings, usually the living room with its view windows, should be oriented more or less to the *north*, a situation opposite to the temperate zones with cold winters where solar-house design calls for southern or southwestern exposures. In hot climates the problem is not to use solar energy to reduce

* *Continued from March 1953 P/A.*

[1] *Work done by the Texas Engineering Experiment Station, College Station, Texas, has produced extremely valuable data concerning the placement of openings in buildings where natural ventilation is important. Research Report No. 22, "Some General Considerations on the Natural Ventilation of Buildings," and Research Report No. 36, "Geometry of Classrooms as Related to Natural Lighting and Natural Ventilation," developed and published by the Station, are important contributions to this field. At the B.R.A.B. Conference last November, additional data on this subject were presented in a paper by Bob H. Reed; these, however, were supplementary discussions of natural ventilation in practical terms of application rather than advances of basic knowledge.*

heating load; it is to get rid of solar energy by whatever means possible in order to keep it from increasing the cooling load. If other factors such as view and prevailing winds are also favorable, a north orientation can be extremely effective in increasing comfort in the most-occupied and largest-windowed rooms of the house.

(2) All openings exposed to the sun should be shaded. If natural shade cannot be provided, whether trees or vines growing over arbors near enough to the windows to keep out most of the sun's heat, artificial shade must be built in. Experiments by F. C. Houghten and David Shore in 1940 showed that while there was a design radiation gain (in Btu per square foot per hour) through an unshaded western window of about 175 Btu between three and four p.m. on a hot summer day, the same window protected with a dark-colored outside shading screen had a radiation gain of only 48.4 Btu.[7] There was less heat gain through south windows and even less through east and north so that the shading problem is greatest on the west and southwest exposures. However, particularly in hot-dry climates where solar glare is often a serious problem as well as solar heat, shade is important on all sides of the house. Verandahs and wide balconies furnish shading for windows and at the same time make possible outdoor living, particularly if adequately screened. Wood, concrete, or metal overhangs can be made a part of the structure *(Figure 3)*, as can pivoted vertical louvers which can be turned to bar the sun's rays as their direction changes position throughout the day. Wood, metal, or glass exterior hoods or Venetian blinds, wood jalousies, and fabric awnings can be applied as removable and replaceable units. At times heavy draperies are employed which can be pulled across the inside of the windows in the hottest weather but this shading device is defective in that it closes off the view, bars natural ventilation, and is less efficient a barrier to radiation than the exterior devices mentioned.

(3) Window types are often important. The double-hung window is never as satisfactory in hot climates as the vertical or horizontal casement if correctly oriented, or the sliding window that disappears entirely into the wall. One can open only half the area occupied by a double-hung window for ventilation. The other half is always glass-covered—a defect even in an air-conditioned home where windows often are opened to admit cool evening breezes, as previously pointed out. In some regions, a single outswinging side-hinged window, correctly oriented in terms of prevailing winds, could act as an efficient wind scoop to bring the breezes into the structure. In general, however, single and double casements should be avoided in areas where high winds and hurricanes are known to occur.

(4) Glazing. The type of glass to use is not difficult to determine, since the decision will be largely an economic one. Can the owner afford heat-absorbing glass or not? It is more costly than ordinary double-strength window glass and its contribution to interior coolness, while considerable, is not necessarily large enough to warrant its use in most homes—particularly those that are not air conditioned. If windows are shaded adequately, heat-absorbing glass is not especially valuable, since the only heat that such glass helps to bar more than any other kind of glass is radiant heat.

Heat-absorbing qualities are now available in 7/32 in. thick double-strength window glass. If this heat-absorbing, double-strength window glass is not too costly, it should be used in all openings exposed to the sun in hot climates because of the reduction in heat gain it would cause.

As for double glazing, whether of the integral type or composed of inner window and outer storm window, there is conflicting evidence of its value as a heat gain reducer. The Libbey-Owens-Ford Glass Company states that a single ¼-in. plate glass window transmits about 87% of the total solar

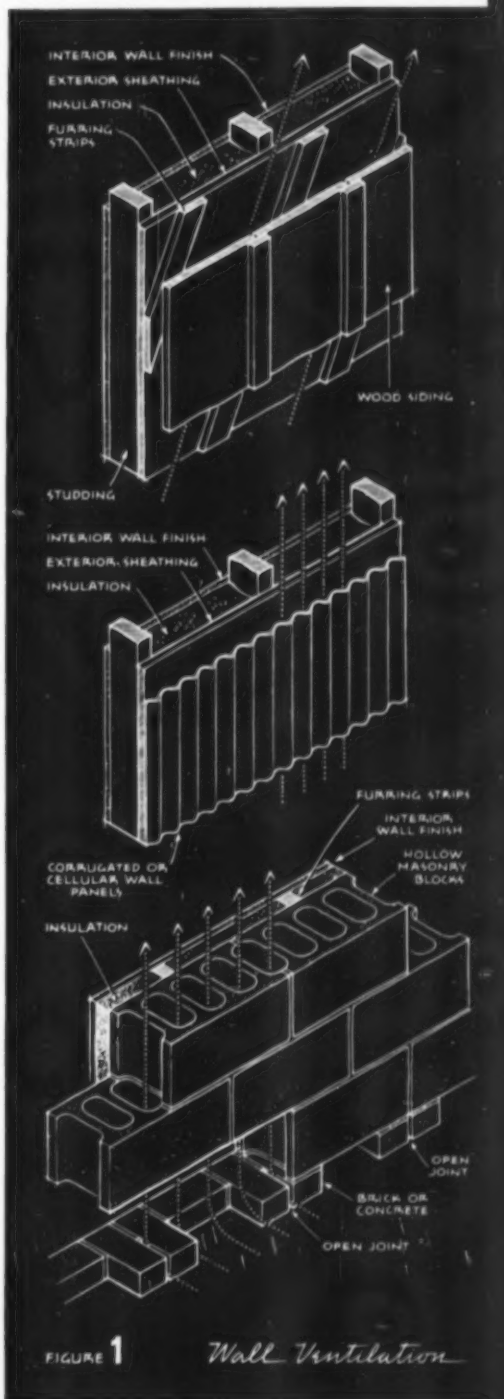
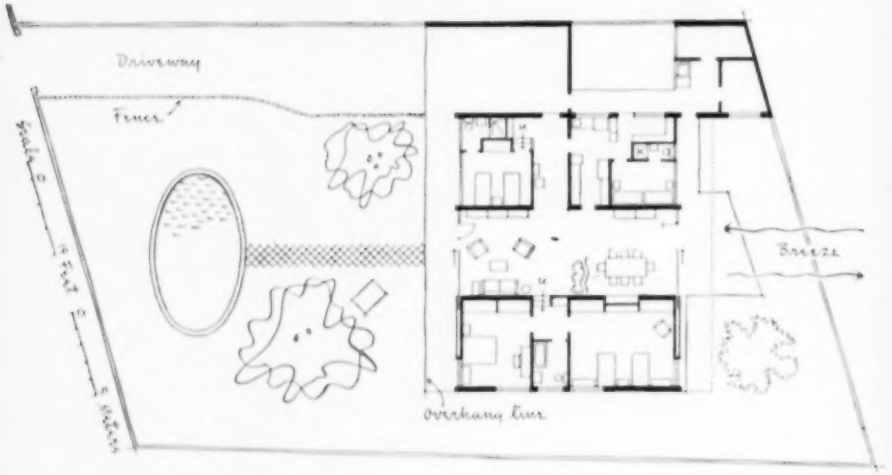


FIGURE 1 *Wall Ventilation*

[7] *"Heat Gain Through Western Windows With and Without Shading,"* by F. C. Houghten and David Shore, Heating, Piping and Air Conditioning, 1940.

Figure 2—Fleischmann residence, Palmira (near Bogota), Colombia. Sliding-glass walls on opposite exterior walls (42 ft apart) allow complete penetration of prevailing breezes into living and dining areas of this home. The continuous barrel-vault roof projects six feet on either side of the house to afford good protection from the direct rays of the sun. J. Arango & F. Murtra: Architects-Engineers.



energy from sun and sky. The radiant heat penetrating their sealed double-glazing with ½-in. air space between the sheets is about 77%, only 10% better than regular plate. When the outer light of the double-glazed unit is heat-absorbing plate, the solar energy transmitted drops to 58%. Heat-absorbing plate glass alone permits the passage of roughly 70% of the total solar radiation, according to L. O. F. Of course, the double glazing (with or without heat-absorbing glass) has a U factor of 0.56 for summer conditions, as compared with 1.06 for both plain and heat-resistant plate. Therefore, under very hot conditions for an air-conditioned house, double glazing with one pane heat-absorbing might very well pay for itself in lower cooling load, particularly if the openings are to be very large.

(5) Windows versus artificial light; high wattage lighting versus low-wattage. Dean Woolrich points out that[1] "The injudicious application of picture windows where such units serve as solar heat traps, the installation of large areas of natural window lighting where artificial lighting sources would be far more conducive to summer comfort, and the installation of high-wattage mazda-

[1] *Quoted from September 1952 Heating, Piping and Air Conditioning, page 119.*

type lamps where low-wattage fluorescent lamps could well do the job with two-fifths of the heat load are such common errors of builders' judgment in hot climates that the exceptions are fewer than the mistakes in many tropical cities."

This quotation presents the problems—and their solutions. There is only one point to which serious objections could be raised and that is the replacing of large window areas with low-wattage lights in non-air-conditioned houses, particularly if it is not done with very careful judgment. In hot-humid climates especially, the maximum intake and movement of air is desirable. Unless relatively costly artificial ventilation is brought in to replace normal air movement, the large window area in hot climates should not be abandoned. Of course, it should be shaded completely, as previously recommended.

The suggestion to use fluorescent lighting instead of incandescent in hot climates is obviously worth consideration, even though for a variety of reasons it may not be followed at all times. A 100-w incandescent bulb produces 341 Btu per hour, enough to destroy the value of a great deal of evening coolness. A fluorescent of approximately the same brightness (32-w) disperses only 109 Btu per hour into the room and is therefore a sizable comfort improvement over the older form of illumination.

Cellars and Crawlspaces

The problem of condensation in cellars and crawlspaces can be important in hot climates, particularly where outdoor humidity is high. Temperatures in the enclosed underground areas fall below the dewpoint and heavy moisture condensation results; the same thing can happen in inadequately-ventilated crawlspaces. Condensation in crawlspaces usually (but not always) can be eliminated by increasing the ventilating areas, but the problem is often too large to be handled by such means in full cellars.

What happens in hot-humid climates is that the outer air is so moisture-laden that any attempt to reduce condensation in cool cellars by increasing ventilation merely adds moisture (and condensation) to the cool area without sufficiently raising the temperature to cause it to vaporize again. The condition can be remedied by a number of ways: by keeping out all the warm outdoor air, by using dehumidifiers, by installing insulation and a vapor barrier with the vapor barrier facing *outward*, by using some sort of double glazing in the cellar windows, and by heating the cellar until the surface of the walls dries out. The latter expedient is hardly one to be recommended for general use in hot-humid climates.

There are many smaller ways of reducing discomfort in hot climates, including such pleasant devices as using plants in the interior of the house. Interior plantings have more of a psychological than an actual physical effect; indeed, in hot-humid climates they could *add* to the dampness in the dwelling. Consequently, they should be used with care, but they should be used whenever possible.

Since an increase in humidity in a hot-climate house also increases the discomfort, even though the temperature does not rise (this is due to an increase in *latent*, rather than *sensible* heat), specific methods of reducing humidity at points of its origin are always helpful additions to comfort in hot climates. Individual exhaust fans in kitchens, bathrooms, laundries, and other dampness-producing areas are extremely useful in the tropical and semitropical regions, just as they are in the northern zones, if natural ventilation is inadequate to dispose of the surplus humidity.

the special problems of air-conditioned homes

The building techniques thus far described are generally suitable for both air-conditioned and non-air-conditioned homes. Except when a dwelling is to be designed with nonopening windows (and few such homes have been or ever will be built) essentially the same principles of designing for comfort in the noncooled house can be applied as principles of economy in the cooled house. They help to reduce the cooling load—and consequently the initial and the operating and maintenance costs of the equipment.

The procedure for obtaining cooling loads is extremely complex. As Tyler Rogers puts it: "To find air conditioning and cooling loads—use the services of an expert and start during the preliminary design stages."

Many northern architects successfully calculate heat losses for homes they are designing and select heating units accordingly. Heat-loss calculations, in regions where heating is the major comfort and economic problem, are simple indeed compared to over-all heat-gain calculations. All one is really after in figuring heat loss is the amount of heat per degree of temperature differential inside and outside that will escape through the materials and the types of construction being used. The effects of solar radiation, of air currents, of sky radiation, of prevailing winds, of humidity, and so on, are rarely if ever taken into consideration in calculating heating loads. They may be carefully analyzed when problems of orientation, overhangs, etc., are being considered but not at other times. They are, however, of basic importance in hot-climate cooling load calculations and air-conditioning engineers with special experience in hot-climate calculations are about the only people who can figure cooling loads correctly for such climates.

It is somewhat disturbing from the practicing architect's point of view that most northern-trained air-conditioning engineers

Figure 3—complete shade without sacrifice of air movement was provided by a double canopy over the arcade of the Baldwin Hills Shopping Center, Los Angeles. Robert E. Alexander: Architect.

Photo: Julius Shulman

without extensive hot-climate experience sometimes wrongly estimate the total heat gain for cooling load purposes. The reason for this is that they are trained to use "heating and cooling standards that are keyed to the 40th parallel," as Dean Woolrich puts it.[3] He goes on to say: "The usefulness of some of the specifications of prevailing United States codes and standards for air cooling when applied to tropical zones is questionable. Some specifications of our accepted existing codes for computing the cooling load are actually incorrect when applied to tropical areas."

Engineers with wide experience in hot-climate conditions will know how to compensate for these defects and are the only people in the building industry who know enough about heat gain to be able to estimate for air-conditioning equipment satisfactorily. Merely to give an idea of the complexities of their task, here are some of the factors with which they must deal:

(1) Sensible and latent heat.
(2) Direct and diffuse radiation from the sun.
(3) Incident and reflected radiation.
(4) Periodic heat flow and the time lag of heat transmission through various materials.
(5) Equivalent temperature differentials for *radiant* heat, which are multiplied by the U factors for thermal conductivity to arrive at heat gain totals.
(6) Minimum ventilation requirements for the operation of the air-conditioning equipment at differing outdoor humidity levels.
(7) Calculation of heat gain through glass of various types, in various positions, with various orientations, and under varying conditions of shade.
(8) Heat gain (or loss) from ceilings between first and second floors and floors over cellars.
(9) Heat gain from infiltration of outdoor air.

Obviously, this complex operation is nothing that an architect should undertake without special training in air-conditioning procedures. It is, however, quite within the architect's province to dovetail his designs and his specifications with the most economical as well as the most comfort-giving use of air conditioning. In attempting to do this, the methods of reducing heat gain described here might well claim his maximum attention. Most of them are just as effective for economical air cooling as they are for increasing comfort in the non-air-cooled building, with special emphasis on the basic need for a well-insulated structure. Materials that are resistant to the passage of heat in all its forms—convective, conductive, and radiant—including insulations against reflective and conductive heat and heat-absorbing double glazing, are almost basic requirements for the air-conditioned dwelling.

Of course, when designing for air conditioning in hot climates the architect naturally pays somewhat less attention to providing natural ventilation than he does when designing for comfort without air cooling. Whatever openings there are will be closed during the operating period for the air conditioner. Windows are definitely needed and they should be well-designed and sufficiently large, but not too large, to give the occupants a feeling of space and of outdoor-indoor living, as well as to take advantage of views. But it is even more important in the air-cooled house that the glazing be heat-absorbing, that the openings be completely shaded from the direct rays of the sun during the hottest hours and that the largest ones be oriented preferably to the north or the northeast where air temperatures are likely to be lower. Careful window design can have a marked effect on the total cooling load.

In working with an air-conditioning expert, an architect can often make essential contributions. As mentioned above, the expert is trained but he is unfamiliar at times with specific local problems and the architect who is thoroughly acquainted with these conditions often can suggest improvements or corrections.

conclusion

Conditions in hot climates obviously create new problems for architects who have been trained in temperate-zone traditions. However, the intent of this report is not to dissuade practitioners from following their profession in the tropical and semitropical parts of the world, but rather, to alert them to some of the differences that exist between temperate-climate design and hot-climate design, and thus to keep them from making some of the more common mistakes.

That the problem is not entirely one of the true tropics may not have been sufficiently emphasized in this article, but it is perfectly true that "40th parallel thinking" has resulted in bad errors in hot-weather design as far north as the Mason-Dixon Line. Dean Woolrich had some sharp things to say along this line in his paper in *Heating, Piping and Air Conditioning:*

"Some modern examples of the total disregard of the architectural fitness of structures from the point of view of their thermal characteristics can be seen in the thousands of Cape Cod houses being introduced in some of the treeless areas of the suburbs of Washington, D. C. (and Washington's climate approaches the semitropical)." Dean Woolrich goes on to show that similar errors continue to be perpetrated even in notoriously hot regions: "In one exclusive area of Dallas, Texas, the prevailing structures are two-story English designs with no overhanging eaves and many unshielded windows."

But one thing does remain as a common bond between cold-climate and hot-climate design for thermal efficiency and that is the use of insulating materials and methods. These are important not only in air-conditioned homes in the South, where they have a large economic function, but also in non-air-cooled dwellings, where their comfort-producing values make them decidedly worth the small extra expenditure their use involves.

For the old truism still holds: it is a lot easier to keep warm in cold climates than it is to get cool in hot climates. And anything that will help to increase the net comfort of man in an overheated environment is a positive contribution to the health and happiness of a large part of the world—even if its values cannot at first be counted in immediate dollars and cents.

IDEAS in advance of today's standards

Originality of ideas and the quality, economy, and practicability of designs submitted were bases of jury decisions in the recent Architectural Competition, "dedicated to ideas for bathrooms, kitchens, and utility rooms," sponsored by Crane Co., Chicago, Ill., with Howard L. Cheney, Chicago Architect, as Professional Advisor. The 32 winning designs were the work of architects, draftsmen, students, and one professor, representing all parts of the country.

"To begin with, the Jury was looking for designs well in advance of today's standards but sufficiently practical so that they might be used in any custom-built or operative builder's house within the intent of the program," reports Royal Barry Wills, Boston Architect who was Chairman of the Jury. "Skill in rendering was considered only an aid in presenting the design. . . . The room idea was given the primary consideration."

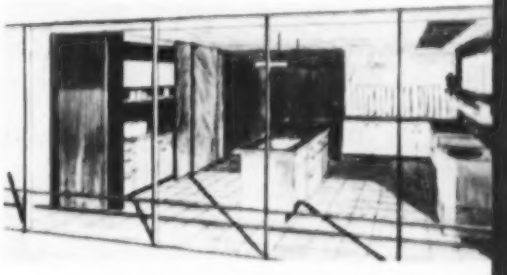
A trend toward health aids such as sun lamps, exercises areas, and in many cases a garden—particularly with bathrooms for homes costing over $25,000—was of interest to the Jury. Complex and over-rendered designs were given short shrift when reviewed. Members of the Jury were: Chairman Wills; Glenn Stanton, Portland, Ore., A.I.A. President; George N. Dahl, Dallas, Tex., Architect; Alan Brockbank, Salt Lake City, Utah, N.A.H.B. President; and Henry Dreyfuss, Industrial Designer, N. Y. and Calif.

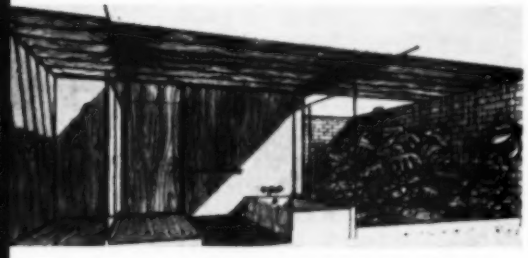
Winners of the top prizes of $3,000 in the four categories of the competition were: *J. A. Curtiss*, M.I.T. graduate student, for bathroom in home costing up to $25,000; *Charles West Jones, Jr.*, U.S.C. '52 graduate, for bathroom in home costing over $25,000; *Richard C. Brigham*, Cambridge, Mass., Architect, for best kitchen; *Donald H. Panushka*, Draftsman for Eero Saarinen & Assoc., Bloomfield Hills, Mich., for best utility room. In addition, there were 28 other prizes for "top" designs.

Compact, yet uncrowded . . . privacy, yet simultaneous use of all four fixtures, were merits Jury found in J. A. Curtiss' design (right) for a bathroom in a house costing up to $25,000.

Admirable arrangement of more fixtures and adjacent garden were praised in Charles West Jones, Jr.'s design (below) for a bathroom in a house costing over $25,000.

The Jury found that Donald H. Panushka had designed (below) a comprehensively planned utility room for varied home work and hobbies.





It's "basic virtue" made the kitchen design (right) by Richard H. Brigham stand out in the Competition. Practical for work, it does not overlook child-play supervision.

resilient flooring resume

by Dave E. Smalley*

Since the advent of linoleum, many years ago, there has been a steady increase in the popularity of resilient flooring. Within the last decade or two, however, the idea has taken on revolutionary proportions.

The most applicable definition which Webster gives to the term *resilient* is "a body capable of withstanding sudden shock without permanent deformation or rupture." Therefore, floors of a resilient nature have these advantages over permanent, hard, nonresilient floors: they yield to pressure, providing greater comfort underfoot; indentation from pressure is self-remedied; they are more sound absorbent and quieter under impact; and they are easier to replace. These desirable factors, along with spectacular improvements in decorative effects, are responsible for the great and growing popularity of resilient floorings.

In the following pages we attempt to describe and discuss briefly the several types of resilient floors. It is to be understood, of course, that we must more or less generalize since the products and recommendations of the several manufacturers are not identical. While the limitations of space prevent our differentiating between the various brands, we will try to be fair to all.

Of the generally recognized types of resilient floors, we have linoleum in its several classifications, cork tile, rubber tile, asphalt tile, and the newer vinyl plastics. Taking these in the order named, we begin with linoleum, the oldest of all and the one with the most variations.

linoleum

Basically, almost all linoleum made today consists of oxidized linseed oil, fine-ground cork and wood flour, color pigments, mineral fillers, and resinous binders. This mix is bonded under heat and pressure to a backing of burlap or felt. Although the designations differ somewhat among the different manufacturers, the several popular kinds of linoleum can be classified as plain, inlaid, jaspé, embossed, marbleized, and tile.

* *Brazil, Indiana.*

Plain Linoleum

Plain linoleum is the newer term for what was for years called "Battleship." In its darker shades and heavier gage it is still frequently referred to by the same name which was derived from the earlier use of this material on the decks of battleships.

As the term implies, plain linoleum is of one solid color. At one time as much as ½-in. thick, it is now rarely more than ⅛-in. in thickness. It is supplied in a rather wide range of shades but the browns, grays, tans, and greens seem to predominate.

The heavy gages are less adaptable in regions where the humidity is excessive, and this rule applies to practically all linoleum since the material is softened by long exposure to such conditions.

Because of its smooth, more-or-less impervious surface, its toughness and consequent wearability, plain linoleum is especially adapted for commercial and institutional use; for this purpose ⅛-in. gage is recommended. For residential and other moderate conditions 3/32-in. gage is recommended.

Plain linoleum is also used extensively for runners in corridors, where it is inlaid in terrazzo or concrete and is frequently used to border and accent custom-designed floors.

The rules for the installation and treatment of plain linoleum differ so little from those of the other kinds of linoleum that those features are discussed collectively in another section of this article.

Inlaid Linoleum

Straight inlaid linoleum is so constructed that the decorative pattern goes entirely through to the backing, thereby preserving the pattern intact during the life of the flooring. It is made by two different methods, one of which is cutting the designs out of different colored strips of linoleum mix, with dies similar to biscuit cutters. These sections are automatically combined in the general design on the backing. Heat and pressure then complete the process.

Molded inlaid is made by sifting finely granulated mix, through a series of stencils, onto the backing material; followed by molding and fusing to the backing, under repeated applications of heat and pressure. Embossed linoleum is also made by this process with the addition of manufacturing processes by which parts of the design are depressed under heat and pressure, creating a textured effect.

Straight inlaid patterns range from simple straight-line styling to custom effects and are usually supplied in gages of 3/32-in. to 1/16-in. They are recommended for residential and light commercial use or, in conservative patterns, for offices and residential kitchens.

The embossed inlaid, usually made in tile and textured styles, offers wide opportunities to create unusual effects in commercial and residential interiors.

Some inlaids are lacquered and waxed before leaving the factory. This pretreatment is probably found beneficial because most inlaids have vertical pores, making the untreated flooring a little more absorbent to moisture and to traffic stains.

Jaspé Linoleum

Jaspé linoleum is similar to plain, except that it presents a multitone, striated appearance in a series of irregular, varying tones of the same or harmonizing color in more-or-less parallel streaks. It is supplied in a variety of colors though the greens and tans seem to be favored.

Somewhat more expensive than the plain, jaspé has these advantages over the latter: it avoids the monotony of a single plain color and its variegated effect helps to conceal footprints, dust, and small litter. It is also capable of being made into many decorative designs such as checkerboard, basketweave, herringbone, miter joint, etc.

Jaspé linoleum can be recommended for schools, hospitals, commercial buildings, and residences. In gage it is obtainable in ⅛ in. and 3/32 in. It is produced in rolls six ft wide and up to 99 ft in length.

Marbleized Linoleum

For all practical purposes there seems to be little difference between the texture and serviceability of marbleized and jaspé linoleums. The principle difference is in the

design, the marbleized simulating the variegated, nondirectional pattern of marble. It is better adapted than jaspé for custom designing because it can be cut into various shapes without harming the pattern effect. Supplied in many patterns and shades, it is available in gages of ⅛", 3/32", and 1/16" and is recommended for all types of interiors.

Linoleum Tile

True linoleum tile, which is sold widely, is merely ordinary linoleum cut into tiles. It has, therefore, the same qualities as linoleum. However, certain linoleum-appearing tile products are processed differently, producing a product much more dense and durable than ordinary linoleum. This type of tile is said to have an indentation resistance of more than 200 psi which is nearly three times greater than that of regular linoleum. Therefore, it is much more than just linoleum cut into squares. It is exceptionally resistant to wear and abrasion and will not crumble or dust under heavy loads. Usually marbleized, the colors of which go through to the backings, it often so closely resembles rubber tile and asphalt tile that close inspection is required to identify it.

Supplied in squares of from 2" x 2" to 12" x 12" and in rectangles of from 3" x 6" to 18" x 36", it is recommended for all public buildings, including schools and hospitals, and for residences. The cost is about that of rubber tile.

cork tile

Cork tile, although it belongs to the linoleum family, differs from linoleum both in manufacture and structure. At one time made simply by compressing ground cork under high heat, the object being to melt the natural cork resins to serve as a binder, it was later found that excessive heat was injurious to the cork. Today certain resins of a lower melting point are used to eliminate the need of high temperatures; and in some cases dielectric heat has supplanted the oven-baking process.

Cork tile is not as durable as other types of resilient flooring and requires more careful maintenance methods.

Softer and more resilient underfoot than any other floorings, it is almost as noiseless as carpeting and exceptionally comfortable. It also possesses a rich dignity not found in other floorings and is particularly adapted for libraries, art galleries, courtrooms, reception rooms, and richly appointed residences. It is often used in banks, where it serves well in tellers' cages.

Since it is cellular in structure, cork tile is virtually impervious to air and atmospheric moisture. It will not warp and is subject to a minimum danger of rotting.

It is sometimes necessary to sand a new installation of cork tile to remove the unevenness at the joints caused by irregularities in the subfloor. However, where the beveled tile is used sanding should not be necessary.

Cork tile is usually supplied in the following sizes: 6" x 6", 9" x 9", 12" x 12", and 24" x 48". In gage it runs 3/16" and 5/16" although some manufacturers supply it in other thicknesses.

Of the various popular types of linoleum, certain comments and information apply to all.

linoleum and cork tile maintenance

All linoleum products, being largely or wholly comprised of vegetable matter, are vitally affected by alkali. Soap is made by combining vegetable oils or fats with alkali; therefore, when linoleum is brought into contact with alkali, especially if the latter is activated by moisture, a process similar to saponification begins. For that reason clients must be warned about the use of alkaline cleaners on linoleum.

But there is much more to the alkali hazard than the use of cleaning agents, at least from the standpoint of the architect. Linoleum, including cork tile, must never be installed over damp concrete or concrete which may become damp. This means that no linoleum of any kind should be laid on a concrete floor in direct contact with the ground—especially in below-grade installations where dampness in concrete is almost certain to exist at some time. There is a natural alkali inherent in concrete which, though much slower in action, can eventually be as effective as lye.

As a matter of fact, all authorities with whom this author is acquainted recommend that linoleum be laid on suspended subfloors, where there is ventilation underneath.

In order to insure the best service from linoleum or cork tile, an owner or supervisor should be instructed in the proper care of the floorings. While the manufacturer usually provides such instructions there are some basic facts that the architect should know.

As already indicated, no cleaner of an alkaline nature should be used. Only neutral soaps (those containing not more than 0.15% free alkali) are recommended, though certain synthetic cleaners (sulfated alcohol or sulfonated hydrocarbons) may be used with safety.

Finishes of a varnish or lacquer nature (those applied at the factory excepted) should not be used since they tend to stiffen the flooring and make it brittle. Floor waxes are the only kind of finish that should be used for the maintenance of linoleum and cork tile and all manufacturers of these floorings approve them. On linoleum either the solvent or water-wax type may be used, though for the original treatment of cork tile two or three applications of the solvent type are recommended, after which water waxes may be used.

rubber tile

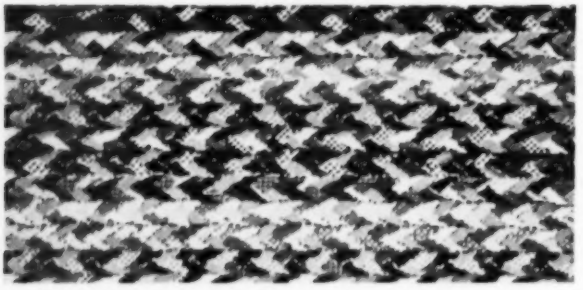
From the standpoint of original cost, rubber tile is the most expensive of resilient floors. This fact, coupled with those which give it exceptional beauty, richness of sheen, clearness of colors, and the luxurious "feel" underfoot, have justified the frequent reference to rubber tile as the "aristocrat of floors."

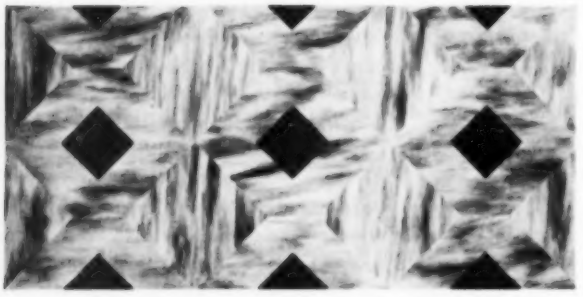
These rather superlative qualities especially recommend rubber tile where an air of elegance is desired, such as in exclusive shops, executive offices, and fine homes. It is also very adaptable for hospitals, clubs, libraries, and schools. Naturally less slippery than some other floors, it is especially suitable for entrance ways.

Originally natural rubber was used in the manufacture of rubber tile but World War II compelled manufacturers to resort to synthetic rubber. This substitution proved to be a boon, since it was soon found that the synthetic rubber possessed better wearing qualities and less tendency toward oxidation (the "death" of rubber) and made possible the control of quality. Uniformity of product, never completely accomplished from natural raw materials, has been established in the manufacture of rubber tile.

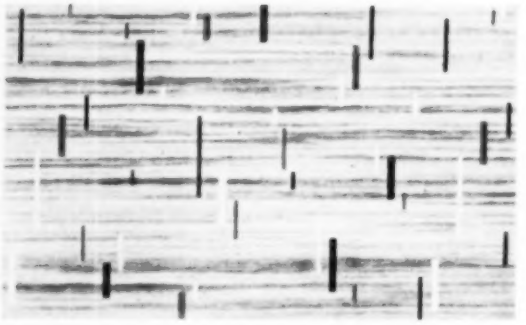
One of the special advantages of rubber tile is its high resistance and its prompt recovery from indentation. Compared to the

linoleum





inlaid linoleum

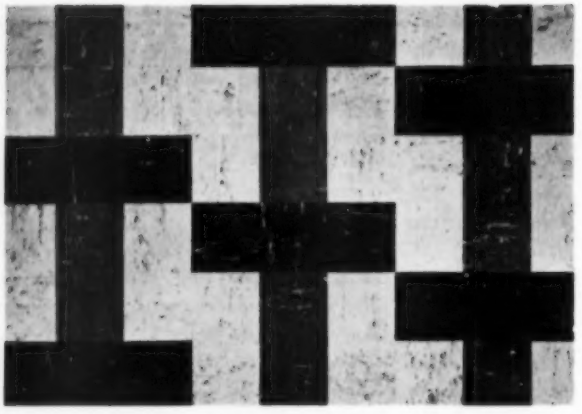


Straight-braid design in linoleum; three possible color combinations (above, left).

Inlaid linoleum; colored "Jackstraw" strips set cross-directionally to striated background colors (above).

Brushed effect in linoleum pattern composed of 6⅜" x 6⅜" and 8½" x 8½" blocks with 3⅛" x 3⅛" insets; gray or brown background, yellow, red, taupe, or green insets (left).

Photos: Armstrong Cork Co.; Congoleum-Nairn Inc. Pabco Products Inc.

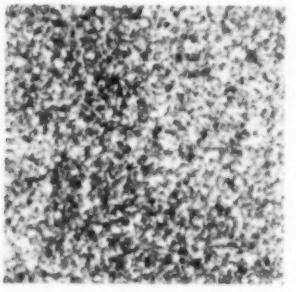


Staggered design in rubber tile (above); *available tile sizes are 6" x 6" and 9" x 9".*

Color and marbleization extend through thickness of these rubber tiles (below); *26 colors.*

Photos: B. F. Goodrich Co. American Biltrite Rubber Co.

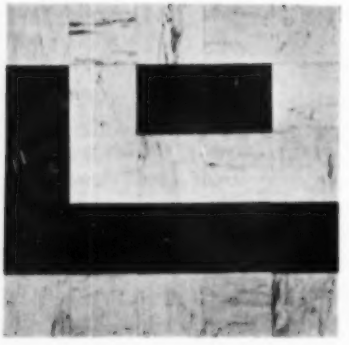
cork



Natural-shade cork tile (above); *gages: 3/16" and ⅜"; tile sizes: 9" x 9", 6" x 12", and 12" x 12".*

Photo: Sloane-Blabon Corp.

rubber tile



resistance of other types of flooring, rubber tile will stand up to 200 psi, whereas 25 psi is considered the limit for asphalt tile, 40 psi for cork tile, and 75 psi for plain linoleum. Rubber tile is, in addition, much more resistant to cracking or crazing and its high-tensile strength prevents excessive contraction and expansion, thus eliminating any tendency to buckle.

As it is the most pliable tile flooring (vinyl tile being a possible exception), rubber tile will conform to smaller irregularities in the subfloor and to minor swellings or settlings of the latter.

Rubber tile can be satisfactorily installed, however, over any smooth, firm floor of concrete, steel, well-seasoned wood, or other hard surface. Of course the floor surface must be free of dust, oil, grease, floor wax, and other foreign matter.

Concrete subfloors must be absolutely dry before installing the tile and this particularly applies to freshly-laid concrete. A simple way to test the dryness of the concrete is to sprinkle a small quantity of calcium chloride in the center of a $\frac{1}{2}$-in. thick ring of putty (about 3 in. in diameter) on the floor. Press a piece of window glass over the putty ring to prevent the outside air from coming in contact with the chemical, the latter being visible through the glass. If there is any moisture or dampness in the concrete, the calcium chloride will dissolve and show water spots. If the chemical remains white and dry after eight hours, it is safe to proceed with the installation. This test may be utilized for testing the moisture in any floor since no flooring should be installed over any kind of damp subfloor.

It is not to be assumed that even such a successful test qualifies a below-grade concrete subfloor for an installation of rubber tile. Nor is it recommended that rubber tile be laid over concrete which is in direct contact with the ground. No matter how dry the surface of such concrete may be at the time, its hygroscopic qualities will eventually draw moisture out of the ground by the process of capillary attraction.

While most manufacturers of rubber tile warn against its installation on below-grade or ground-contacted concrete, at least one manufacturer seems to take issue with them. Or, at least, he recommends his rubber tile for basement floors. He says: "When proper precautions and preparations have been taken, rubber tile flooring can go into any basement at a very small additional cost—not more than 10 to 12 percent." Briefly, his methods are in the one instance, to place a tar, waterproof membrane over the primary slab, to tie it in with the side walls, and to continue up to a point above grade. Then both floor and wall are cemented over. "Where a basement concrete floor has been completed, the floor should be coated with tar; two by four sleepers are then placed, and a plywood subfloor is laid—leaving spaces around the edges for ventilation. Next, saturated asphalt felt is cemented to the subfloor and on this the rubber tile is installed with waterproof cement."

For architects and their clients who may not favor the foregoing method, we shall show later that asphalt tile is more easily adapted for below-grade subfloors and seems to be the more generally accepted material for the purpose.

Rubber tile also seems to serve best on suspended subfloors and in such cases presents no special installation problems. It does, however, call for special maintenance care to avoid damage to the flooring. Differing from linoleum, mild alkaline cleaners are even approved while the use of soaps is restricted by The Rubber Manufacturers' Association. The Association states in its recent cleaner specifications regarding alkalinity: "The pH value of a solution of the maximum concentration recommended for use shall not exceed 11.6." This permits the use of modified soda which is a 50-50 mixture of sodium carbonate and sodium bicarbonate.

Regarding the use of soap, the Association limits to one percent by weight the maximum concentration of anhydrous (dry) soap in the solution used.

Water emulsion waxes are recommended for maintaining all rubber tile and periodic buffing with No. 1 steel wool is suggested. Oils and greases, the hydrocarbons, are all enemies of rubber, bringing about its gradual disintegration. This means solvent-type floor waxes (liquid or paste) should never be used on rubber tile. Neither should oily dust-mops or sweeping compounds be utilized. Daily mopping with clear water and buffing with a floor polishing machine is the recommended routine.

asphalt tile

No type of resilient flooring has made such rapid strides in popularity as has asphalt tile. Once an unlovely material whose limited two-tone color scheme was sometimes referred to as "two shades of black," it has developed into one of the most decorative of floorings.

Now made principally or wholly of asbestos fibers, mineral pigments, and resinous binders it is capable of being made into all the rich and vivid colors of the other floorings.

It is not nearly as pliable or resilient as rubber or linoleum and unless it is warm, it will break before it bends. For that reason perfectly level, smooth, nonflexible subfloors are more important than in the case of any of the other resilient floorings.

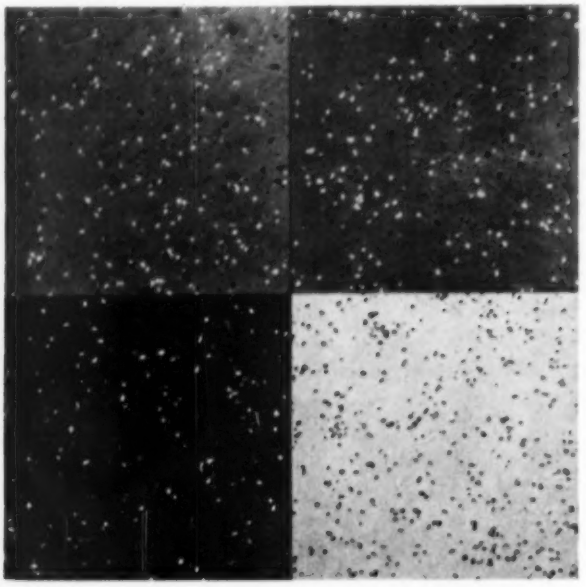
Although its resistance to indentation is comparatively low, it is probably the toughest and most "foolproof" of all the floorings. Only certain solvents (such as gasoline, oils, greases) which quickly dissolve it seem to be the natural enemies of asphalt tile. Solvent-type waxes, including paste wax, are ruinous.

Being thermoplastic it softens under heat, but is relatively fire-resistant. It is the one type of resilient flooring which is recommended by all of its makers for below-grade installations and it can be used on concrete at any level.

In the case of wooden subfloors, one manufacturer specifies that the floor should be double and composed of well-seasoned boards, not over 3 in. wide. He further specifies that "A layer of 15-lb completely asphalt-saturated felt paper with butt joints shall be laid across the boards and cemented down with linoleum paste. The felt paper shall be thoroughly rolled with a 100-lb 3-section iron roller."

In any case, there should be an underlayment of felt cemented across the wooden floor and it is recommended that the tile itself should be kept in a warm room for at least 24 hours before installation. During the laying of the tile a room temperature of at least 70 F should be maintained for easy handling of the tile and adhesive.

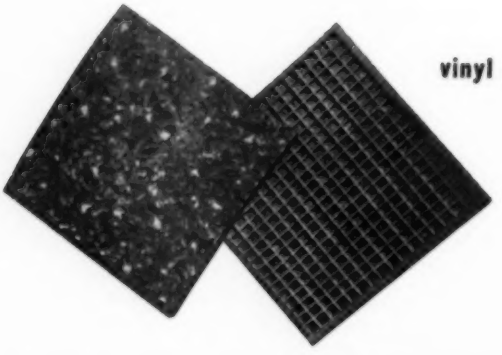
Asphalt tile is now supplied in a greaseproof type, designed for kitchens, automobile showrooms, etc., wherever grease or oil may be spilled. It is from 30 to 50 percent more expensive than standard tile and



asphalt tile

Asphalt tile in confetti pattern of multi-color dots and dashes on solid-color background (left); *9" x 9" squares are 1/8" thick; 10 background colors.*

Photo: Mastic Tile Corp. of America

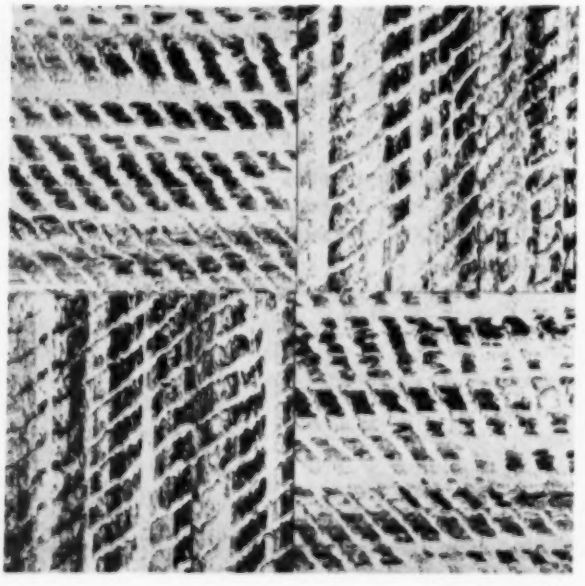


vinyl plastic

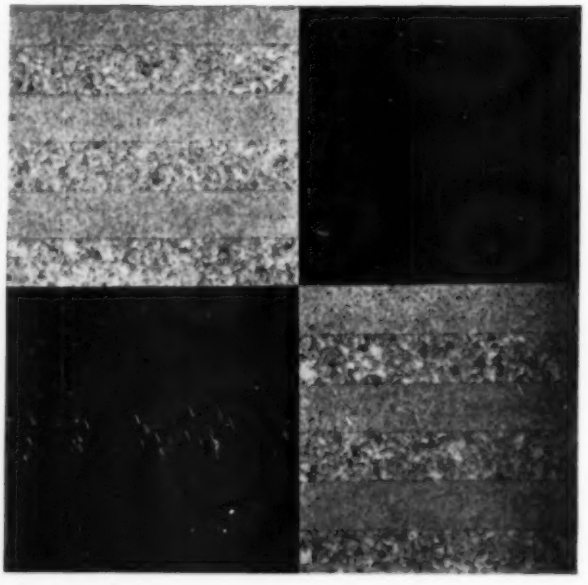
Terrazzo-pattern vinyl-plastic tile (right); *can be installed without use of adhesives.*

Corduroy-pattern vinyl-plastic tiles (below) *and a panel of vinyl-cork parquetry* (below, right).

Photos: Robbins Floor Products, Inc.
Bakelite Co.; Dodge Cork Co.



vinyl plastic



vinyl cork

therefore is recommended only where there is a specific need for it.

Nearly all types of soap and mild alkaline cleaners may be used for maintaining asphalt tile but to obtain best effects and to ease the cleaning it should be waxed, using a water wax, of course. But wax often makes asphalt tile slippery. This fact has given rise to the belief that asphalt tile is naturally slippery. However, according to The Asphalt Tile Institute, the National Bureau of Standards reports as follows: "Under most conditions asphalt tile is safer to walk on than any other smooth-surfaced material, provided it has no high-gloss wax finish."

This would seem to eliminate floor wax for the maintenance of asphalt tile but in the past year or so one of the large chemical companies has developed a solution of suspended, finely-ground silica which, when added to water-wax emulsions, increases as much as 50 percent the coefficient of friction. These waxes, now obtainable from many sources, seem to be the answer for waxing asphalt tile. Varnishes and lacquers are, of course, unsuitable and often detrimental.

Asphalt tile, usually about $\frac{1}{8}$-in. gage, is now supplied in a wide range of colors and designs. It is adapted for use in almost any kind of building and is particularly recommended where cost is an important factor.

vinyl plastic

Vinyl-plastic floorings are just coming into general use and are supplied in both sheets and tiles. As flexible as rubber, they are said to be fairly immune to alkalies, oils, greases, and ordinary mineral solvents. Some makes contain asbestos fibers, others are made of vinyl resins and color pigments, modified with special plasticizers and calendered on felt backing. Some of the tile is molded into shape without a backing, so closely resembling rubber tile that one almost has to "smell" it to identify it.

Its chief attributes seem to be its extreme flexibility, rich colors, and fine natural gloss, though its cost is relatively high. Much is claimed for it by its producers but since it is still a comparatively new material, its wearing qualities over an extended period are yet to be determined.

Vinyl-plastic flooring may be used over practically any kind of dry, smooth subfloor, though only vinyl plastic asbestos tile may be used below-grade. It is recommended for markets, auto showrooms, laboratories, homes, and seems to be popular in drug stores. Tile sizes may vary but the standard seems to be 9″ x 9″ with $\frac{1}{8}$″ thickness, though one authority claims more vinyl tile is used in 1/16″ thickness. Borders run 9″ x 9″ and 18″ x 24″.

A high coefficient of friction is claimed and waxing is pronounced unnecessary. However, since any kind of surface will finally succumb to friction, it is obvious that a protective coating of wax should extend the life of the flooring.

conductive flooring

While, in the foregoing, we have discussed the different popular resilient floorings as such, there is still something to be said about a certain phase of those floorings that has become important. Conductive flooring constitutes certain structural adjustments in the different types of flooring for the purpose of draining off static electricity.

In most cases conductive floorings are now compulsory where installations are made in the surgeries of hospitals and other locations where explosives are used or stored.

A few of the leading manufacturers of linoleum, rubber tile, and asphalt tile now supply their floorings with conductive qualities. In appearance and other visible characteristics they cannot be distinguished from the regulation floorings. But they must be specially maintained, avoiding the use of coatings which might nullify the conductive properties for which they are designed. An inquiry recently made of The Underwriters' Laboratories brought this reply, "We have listed no waxes or similar finishes for general use on conductive floors. Two manufacturers of ours listed electrically-conductive floorings supply finishing and maintenance materials which may be used on their own floors but these materials have not been tested and listed for general use on various types of floors."

radiant heating

In concluding this article on resilient floors there is something to be said in regard to their use over radiant heating installations. Since this type of heating consists of a series of pipes, often embedded in concrete floors, the same rules apply as already cited for the proper use of resilient flooring on concrete.

Therefore, if the concrete is in direct contact with the ground on or above grade, asphalt or rubber tile may be used. However, for below-grade installations only asphalt tile should be used. On suspended subfloors where the heating is located, linoleum may be used. Cork, rubber, and the vinyls may also be used in radiant-heating installations and are completely efficient for such use.

Because of the thermoplastic qualities of most resilient flooring materials, these floors tend to become slightly softer when radiant heating temperatures run higher than normal. However, since most radiant systems deliver normal temperatures of 75 to 85 F at the immediate surface of the floor, it is not considered any more effective than the direct rays of summer sunlight.

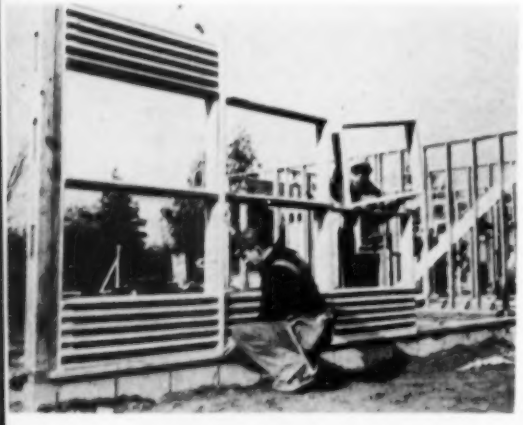
Near the beginning of this article the writer said that it would be difficult to abide by the specific descriptions and directions of all the manufacturers of resilient floors. Obviously we have been unable to do so but we have endeavored to give the architect-reader the general idea which cannot have gone too far astray from any one manufacturer's version. At least we have tried to be as fair with the makers of the floors as we have tried to be helpful to our readers.

acknowledgments

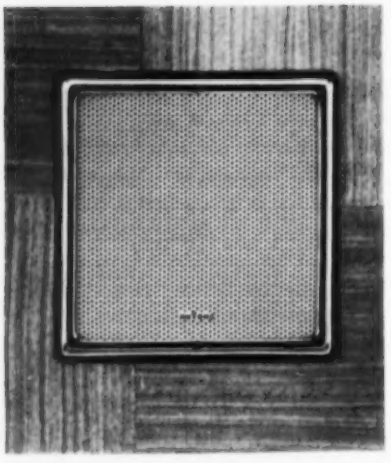
The following organizations, through their literature and personal help, have assisted greatly in the preparation of this article:

American Biltrite Rubber Company
Armstrong Cork Company
The Asphalt Tile Institute
Bakelite Company, Division, Union Carbide and Carbon Corporation
Congoleum-Nairn Inc.
Delaware Floor Products, Inc.
Dodge Cork Company
The Flintkote Company, The Tile-Tex Division
Fremont Rubber Company
The B. F. Goodrich Company, Flooring Division
The Goodyear Tire and Rubber Company
Johns-Manville
Kentile, Inc.
Mastic Tile Corporation of America
Pabco Products Inc.
R. C. A. Rubber Company
Robbins Floor Products, Inc.
Sloane-Blabon Corporation
United States Rubber Company
Uvalde Rock Asphalt Company

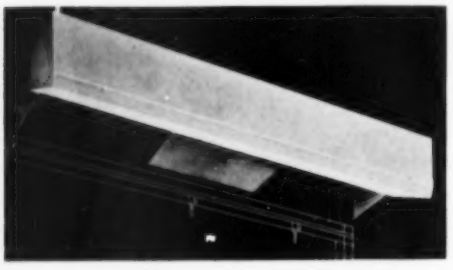
p/a products



Self-stacking "Totem" units—fixed windows, ventilating windows, wood-louvered ventilating units, and insulated wall panels—interlock in any combination desired, either horizontally or vertically (left). *Identical in size, each unit is 4' high, 2'-4" wide, 4⅜" thick, and has a bearing load of 2400 lbs (vent units also come in half and quarter sizes). Top, bottom, and sides of all panels have two grooves to accommodate splines that come packaged with each unit. Solar Air-Flo, Inc., Elkhart, Ind.*



New recessed chime—7" square with sounding mechanism behind the wall line—cannot be bumped, damaged, or scraped (left). *Tone results have been improved by use of a double resonator system whereby both ends of the tone bar are resonated. Multiple installation provides uniformly mild tone throughout house. This chime sounds two notes for the front door and one for the rear. NuTone, Inc., Cincinnati, Ohio.*



Leonard V. James, Fellow I.E.S. has stated: ". . . It might first be noted that even good general illumination in the room (class) *will normally provide less than half as much light (footcandles) at the wall or chalkboard surfaces as at the task on the desk." The "chalkboard dean"* (left) *has been introduced by the Solar Light Manufacturing Company of Chicago as its contribution toward the proper illumination of classroom chalkboards.*

air and temperature control

Weathermaker: new low-cost residential air-conditioning unit provides two tons of cooling and dehumidifying capacity plus winter heating and year-round filtered air circulation. Measures 37" x 37", 62" high. Burners are available for heating with any type of gas or with oil. For areas where water is scarce, air-cooled condensing attachment may be used which eliminates water consumption. Cooling and dehumidifying capacity is supplied by hermetic compressor. Carrier Corp., 300 S. Geddes St., Syracuse 1, N. Y.

Air-Conditioning Unit: new residential air conditioner supplies heat by gas-fired, forced-air furnace and summer cooling and dehumidification by automatic electric refrigeration unit. Models in 3- and 5-ton capacities for new or existing homes of six to eight rooms. 3-ton size: 70" high, 40" wide, and 34¼" deep. General Motors Corp., Frigidaire Div., 300 Taylor, Dayton 1, Ohio.

Two-Ton Gas Fired Air Conditioner: new unit providing summer and winter air conditioning for houses in price range of $10,000 to $14,000; cost not over 10% of price of house. 27" wide, 75" high, covers 8¼' of floor space; delivered complete, less ductwork. Other features: quietness of operation, low maintenance costs. Servel Inc., Evansville 20, Ind.

Air Volume Extractor and Controller: double-duty adjustable air-volume extractor and controller is factory assembled and, according to manufacturer, saves sheet metal workers up to 50% in assembly time over handmade methods. Unit of heavy-duty construction makes use of curved blades which bring even distribution of air to entire grille face. Titus Mfg Corp., Waterloo, Iowa.

construction

Masonite Presdply: 4' x 8' panels for concrete form work have core of plywood and faces of hardboard with grainless surface. Combines sheathing and lining in one material; may be reused a number of times. Smooth finished concrete is obtained which does not require hand rubbing. Panels available in thicknesses of ⅝" and ¾". Masonite Corp., 111 W. Washington St., Chicago 2, Ill.

Skytrol Glass Block: new light-diffusing glass block designed for use in skylights both structurally and optically. Fibrous glass screen sealed in block creates double cavity which improves insulating value and diffusion of light. Block is 12" x 12", 4" thick. Pittsburgh Corning Corp., 307 4 Ave., Pittsburgh 22, Pa.

doors and windows

Weather-Seal: new improvement for sliding glass doors uses mohair pile as a combination weatherstrip and guide in glass-run channel of top section of door. Eliminates need for top guide rollers. Mohair pile provides double weatherstrip which contacts both sides of vertical flange in head of frame. Exterior appearance of installation is not changed. Arcadia Metal Products, 324-31 N. 2 Ave., Arcadia, Calif.

Window and Door Lintel: new lintel is produced by roll-forming process which eliminates any twist and assures that lintel lies flat at both ends. Special rib construction prevents wall drainage contact with the sash and provides space for a solid bed of mortar. No tuck pointing is necessary. Available in two gages and sizes from 2'-0" to 7'-6" Sharon Steel Corp., Brainard Steel Div., Warren, Ohio.

electrical equipment, lighting

Indirect Fluorescent Design: luminous indirect fixture designed for pendant mounting. Full reflecting-transmitting ribbed plastic panels are curved at a radius which is modern in appearance, yet allows correct levels of illumination for classrooms, offices, and other interiors. Variety of lengths may be mounted individually or joined in continuous rows. Two and four lamp models are listed. Fluorescent Fixtures of California, 3320 18 St., San Francisco, Calif.

finishers and protectors

Staize-Clene Paint: new odorless enamel paint which will resist dust, dirt, and grease is recommended for hotels, restaurants,

plants, offices, hospitals, and other institutional users. Patented ingredient leaves almost poreless film. 39 colors in flat, semigloss, and gloss finishes. Enterprise Paint Mfg. Co., 2841 S. Ashland Ave., Chicago 8, Ill.

Skid-Not Floor Finish: new transparent plastic floor finish is said to be completely skid-proof and can be applied over varnished or enameled wood, rubber or asphalt tile, cork, terrazzo, or magnesite floors. Colorless liquid forms semigloss, nonglare finish that lasts three to four times as long as wax. Especially adaptable for use in hospitals, schools, and commercial, industrial, and public buildings. The Monroe Co., Inc., 10703 Quebec Ave., Cleveland 6, Ohio.

insulation (thermal, acoustic)

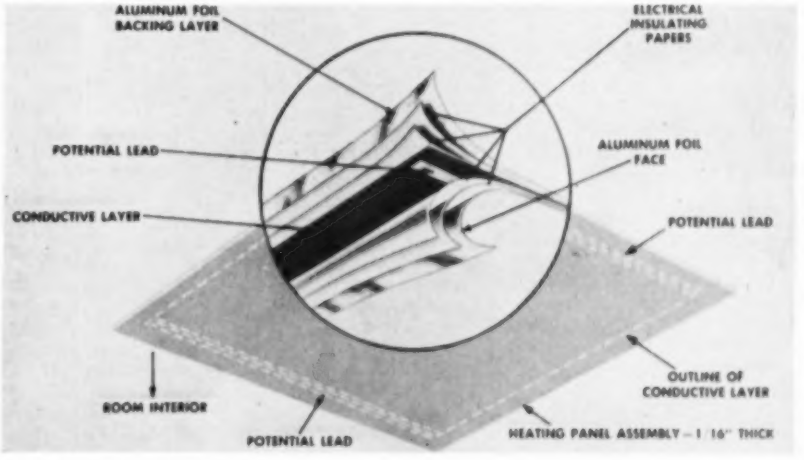
Acoustilite: perforated acoustical tile-board made from light-colored wood fibers. Size: 12" x 12" tile with ½" and ¾" thicknesses. Applied with adhesive or nails. Beveled butt edge joint, standard 484 drilled holes per tile: factory-painted white surface with 78% light reflection. Minnesota and Ontario Paper Co., Insulite Div., 500 Baker Arcade Bldg., Minneapolis 2, Minn.

Aerocor Insulation: new use for insulation material as noise-absorbing pads behind metal ceiling pans. Pads have .85 noise reduction when used behind the standard perforated metal pan system. Made of minute fibers of glass, pads will not burn or support combustion, will not rot or decay, and will not absorb or give off odors. Paper facing on the pads is not necessary. Owens-Corning Fiberglas Corp., Nicholas Bldg., Toledo 1, Ohio.

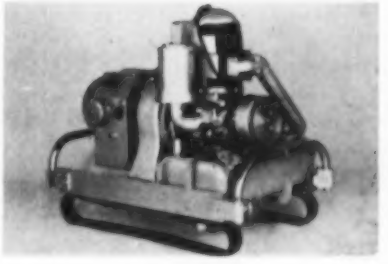
sanitation, water supply, drainage

Remote Type Water Cooler: redesigned line of remote-type water coolers includes models in either 3-, 5-, or 10-gallon capacities. Compressor, condenser, cooler, and wiring completely enclosed in metal and finished in baked gray enamel. One unit can serve from one to five wall fountains. In addition to water cooling, unit may be used for cooling light oils, some chemicals, and alcohol. Control dial enables the user to regulate the outlet water temperature within the control range to suit his own needs. Temprite Products Corp., E. Maple Rd., Birmingham, Mich.

Electric radiant-heating panels — only 1/16" thick and weighing but 6 oz per sq ft—can be cemented to ceiling like ***wallpaper*** (installation photo right; detail drawing below). *Although complete radiant heating for an entire house or a single room is possible with the panels, they are particularly useful for an added room or for supplementary heating. Three sizes are available: 4' x 6', 4' x 4', and 3' x 4'. Panels are rated at 22 watts per sq ft (75 Btu's) and are available for either 115 or 230 volts. Surface temperature averages about 100 F. United States Rubber Company, Rockefeller Center, New York 20, N. Y.*



New, dual-voltage, 5 kilowatt portable generator will carry a continuous load of 5,000 watts, single phase, 60-cycle alternating current at either 115 or 230 volts (right). *Dimensions are: 29" long, 24½" wide, and 25½" high, weight: 228 lbs, complete with gasoline engine. Homelite Corporation, 67 Riverdale Avenue, Port Chester, N. Y.*



specialized equipment

Sun Position, Heat Gain, and Shading Data Calculator: slide calculator will figure heat gain through windows in a matter of minutes. With the latitude of the building and the compass bearing of the window known, calculator can figure sun altitude, relative sun-window azimuth, shadow angle, radiance transmittted through bare window, and shade percentage using Ingersoll Kool-Shade Sunscreen. By changing inserts, calculations can be made for most latitudes in North America. Borg-Warner Corp., Ingersoll Products Div., 310 S. Michigan Ave., Chicago 4, Ill.

Pantryettes: new steel kitchen wall cabinets with translucent sliding glass door panels. Can be easily hung by homeowner at any height desired. Units are mounted on special hangar strips which are attached to wall-studding; come in variety of lengths from 18" to 5½'. Nash-Kelvinator Corp., Kelvinator Div., 14250 Plymouth Rd., Detroit, Mich.

Vertical Files: new vertical filing system which results in substantial savings in floor space and in installation costs uses steel vertical file shelves. Folders are easy to find and to replace. Compact, library-like arrangement of stacks and folders has cut down unproductive walking time. Fewer file clerks are required. Virginia Metal Products Corp., 1112 First National Bank Bldg., Pittsburgh, Pa.

surfacing materials

Poly-Krome Asphalt Tile: terrazzo-design asphalt-tile flooring for residential and commercial installations. Multicolored chips set deep into surface of tile retain their sparkle throughout the life of the flooring. Available in 10 colors. Hachmeister-Inc., Floor Tile Div., Box 357, Pittsburgh 30, Pa.

p/a manufacturers' literature

★ *Editors' Note: Items starred are particularly noteworthy, due to immediate and widespread interest in their contents, to the conciseness and clarity with which information is presented, to announcement of a new, important product, or to some other factor which makes them especially valuable.*

air and temperature control

1-5. Agitair Stripline (S100-153), 12-p. booklet describing air diffusers with built-in diffusing vanes which create turbulence for mixing and cause quick temperature equalization. Information on available widths of two models, selection procedure, design and construction, typical application and installations, and methods for testing the diffusers. Charts, drawings, photos. Air Devices Inc., 17 E. 42 St., New York 17, N. Y.

1-6. Suggestions for Designing Radiant Panel Heating with Copper Tube, 50-p. brochure which includes chapters on radiant panel heating, general design consideration, a suggested simplified design procedure, installation practice, and a discussion of why copper tube should be used for radiant-panel heating with a question and answer section. Tables, drawings. Chase Brass & Copper Co., Waterbury, Conn.

1-7. Trade-Wind Clipper Blowers, A.I.A. 30-D-1 (620G), 8-p. folder listing five requisites for successful kitchen and small room ventilation and advantages of blower models for kitchen cabinet and ceiling installations. Specifications, information on accessories, and installation drawings of various units. Trade-Wind Motorfans, Inc., 5725 S. Main St., Los Angeles 37, Calif.

★ **1-8. USKON Electrical Radiant Heat from the Ceiling,** A.I.A. 30-C-44 (M-3177), 24-p. booklet describing prefab electrical heating panels for residential or commercial installation and adaptable to new or old construction. Heating units which utilize sheets of electrically conductive rubber now available in sheets 1/6" thick or in rigid panels ¼" thick. Advantages, construction and installation information, heating cost estimation, specifications. Tables, photos. United States Rubber Co., Passaic, N. J.

construction

2-9. Spectra-Glaze Specifications, 4-p. folder with data on a structural concrete block with face glazed to provide a permanently finished surface. Drawings of available shapes, information on color selection, textures, strength, chemical resistance, dimensional stability, and cost. Also test results and specification data. Glazed Block Corp., 147 5 St., Rochelle Park, N. J.

Two bulletins on gypsum lath and water-repellent core-treated gypsum sheathing. Description of physical properties and uses of plain, perforated, and insulating lath with fire resistive ratings, attachment details, information on floating systems of attachment, and suspended ceilings. Details of construction and specifications of the sheathing. Gypsum Assn., 20 N. Wacker Dr., Chicago 6, Ill.:

2-10. Fireproof Gypsum Lath, A.I.A. 20-B-2

2-11. Fireproof Gypsum Sheathing, A.I.A. 19-D-3

2-12. Reynolds Architectural Aluminum, A.I.A. 15 (BI-9-1052), 16-p. brochure listing architectural advantages of aluminum and describing various applications. Tables of available sizes of square and rectangular tubing and bars, square corner and structural shapes, sheets, plates, and extrusions. Outline of mechanical, chemical, electrolytic, electro-plate, and organic finishes. Reynolds Metals Co., 2000 S. 9 St., Louisville 1, Ky.

2-13. Rilco Glued Laminated-Wood Arches, Beams, and Trusses, A.I.A. 19-B-3, 20-p. catalog illustrating basic shapes of laminated-wood tangent arches, purlins, beams, radial arches, bowstring trusses, utility arches, timber trusses, and girders and showing their application in the construction of churches, schools, gymnasiums, commercial and industrial buildings. Basic design data, dimension tables, and connection details. Rilco Laminated Products, Inc., First National Bank Bldg., St. Paul 1, Minn.

★ **2-14. Design Data for Reinforced-Concrete Columns and Sonotube Technical Data.** Tables giving design data for round reinforced concrete columns with any of 11 diameters as compiled by the Clemson Engineering Experiment Station, Clemson College, S. C. Also reports on crushing and bursting strength tests of a laminated fiber form for the construction of round concrete columns. Sonoco Products Co., Construction Products Div., Mystic, Conn.

2-15. One Hundred Years of Engineering Progress with Wood, 112-p. compilation of papers presented at the wood symposium held during the Centennial of Engineering Convocation, Chicago, Ill., Sept. 3-13, 1952. Twenty-one papers and six discussions describe many phases of wood utilization and factors affecting their progress during the past century, including working stresses, structural and other commercial lumber grades, laminated timbers, and engineering progress. Photos, tables. Timber Engineering Co., 1319 18 St., N. W., Washington 6, D. C.

doors and windows

3-9. Gate City Fact Folio, A.I.A. 16-L. Information with illustrations on preservative-treated wood awning windows, including specifications for the complete unit, schedule of sizes and types, and hardware specifications. Detail sheets on thermopane glazing and vinyl jamb and metal horizontal weatherstripping. Also installation suggestions with details for different types of construction. Gate City Sash & Door Co., P. O. Box 901, Fort Lauderdale, Fla.

3-10. Hasko Doors, 8-p. folder featuring a flush door with core of wood arch ribs ⅛" thick, spaced 1½" apart and also describing a line of flush, ready-hung, and roller doors. Specifications, sizes, construction features; photos, drawings. Haskelite Mfg. Corp., 700 Ann St., Grand Rapids 2, Mich.

3-11. Aluminum Awning Windows, 16-p. booklet giving information on a line of aluminum windows with flash welded frame corners. Illustrations of typical installations in residences and commercial and public buildings. Sectional drawings, installation details for frame, brick veneer on frame, brick veneer on block and concrete masonry. Standard, modular, and special sizes; specifications; operating hardware. Industrial Machine Tool Co., Inc., Tru-Seal Window Div., Fenton, Mich.

3-12. Saving Ways in Doorways, A.I.A. 16-D (75), 32-p. catalog with photos and drawings of steel rolling doors, fire doors and shutters, two-section doors, roll-top sectional overhead doors, steel rolling grilles, and special doors and counter closures. Description of features, specifications, drawings, photos. The Kinnear Mfg. Co., 820-870 Fields Ave., Columbus 16, Ohio.

3-13. Aluminum Windows, 16-p. catalog of residential double-hung and casement windows of aluminum with stainless steel hardware. Specifications, size chart, full-scale and installation details. Drawings, charts, photos. Metal Arts Mfg. Co., Inc., P. O. Box 4144, Atlanta, Ga.

3-14. Doors and Entrances by Natcor, A.I.A. 16-E, 12-p. catalog describing a line of aluminum entrances and narrow stile doors with extruded aluminum sub-buck. Door and frame details of standard size units and units custom-built to architects' specifications. Dimensions, specifications, and glazing recommendations. National Glass Co., Natcor Store Fronts Div., Taunton, Mass.

3-15. Steelcraft, A.I.A. 16-E (SCC-521), 12-p. brochure giving information on steel residential casement windows and industrial windows. Specifications, available types, and sizes, sectional drawings, and installation details. The Steelcraft Mfg. Co., 9017 Blue Ash Rd., Rossmoyne, Ohio.

electrical equipment, lighting

4-5. Curtistrip, A.I.A. 31-F-2 (2423), 12-p. catalog of various sized wiring channels for all types of lighting equipment; small, medium, and large units made of heavy gage cold rolled steel and finished baked aluminum. Detailed descriptions, illustrations

of channels and accessories, illumination data, applications. Curtis Lighting, Inc., 6135 W. 65 St., Chicago 38, Ill.

4-6. Ballasts for Fluorescent Lamps (495 OE). 16-p. bulletin on fluorescent lamp ballasts for residential, commercial, and industrial uses contains photos and wiring diagrams of equipment, gives specifications, of switch-start, trigger-start, slimline, circline, germicidal, and d-c operation ballasts. Also descriptions of ballasts for instant-start lamps, series ballasts with sequence starting, multiple use of slimline ballasts, and high voltage lighting for commercial buildings. General Electric Co., 1 River Rd., Schenectady 5, N. Y.

4-7. Guardian for the Finest in Service Station Lighting (52), 32-p. catalog covering service station lighting equipment with technical data and general information on horizontal and vertical fluorescent units for pump island lighting, sealed beam spot and flood lampholders, reflectors, splice boxes and fittings, sign lighting units, brackets, lighting standards, hinged poles, and other related equipment. Photos, drawings, charts, index. Guardian Light Co., 301 Lake St., Oak Park, Ill.

4-8. Swivelier, A.I.A. 31-F-23 (132), 40-p. brochure describing line of adjustable lighting equipment including canopy shade units, portable units, "Vogue-Lites," recessed fixtures, wiring devices, units for outdoor use, special units, and lighting accessories. Information also on patented wall socket, detailed specifications of units, illumination data; photos, list of prices, numerical index. Swivelier Co. Inc., 43 34 St., Brooklyn 32, N. Y.

4-9. Engineered Fluorescent Lighting (B-5799). 24-p. pocket catalog on fluorescent luminaires for commercial buildings and industrial plants gives information on where the respective types of luminaires are best applied, what models are available, the features of each, and their dimensions. 4-p. table with standard data on all the luminaires including style number, description, and price. Photos, diagrams. Westinghouse Electric Corp., Box 2099, Pittsburgh 30, Pa.

finishers and protectors

5-2. Carbosota Wood Preservative (P770), 6-p. folder giving features of a coal-tar creosote oil wood preservative which protects wood against insects and fungi and also retards excessive shrinking, swelling, and checking. Application and coverage information, description of open tank process. Allied Chemical & Dye Corp., The Barrett Div., 40 Rector St., New York 6, N. Y.

5-3. Where to Use Tapecoat, 8-p. brochure describing possible applications of a coal tar protective coating in tape form in gas and oil, transportation and communications, water and sewage, and general industrial fields. Table of coverage, photos. The Tapecoat Co., 1523 Lyons St., Evanston, Ill.

insulation (thermal, acoustic)

6-3. Job-Proved Celotex (1600-A), 12-p. booklet on insulation boards for use over any type of solid deck under built-up roofing: smooth-surfaced, slag, or gravel. Sizes, thicknesses, and edges of four types of insulation board and advantages of each. Coefficients of transmission (U) of flat roofs covered with built-up roofing. Photos, drawings. The Celotex Corp., 120 S. LaSalle St., Chicago 3, Ill.

Two booklets on line of acoustical and sound control products. One contains illustrations of the use of glass fiber products in offices, retail businesses, hospitals, schools, and industrial plants. The other includes technical data on noise reduction coefficients, application details and specifications for textured, perforated, and plastic-faced acoustical tile; ceiling board; baffles; insulation pads; preformed insulation; and insulating wool. Owens-Corning Fiberglas Corp., Nicholas Bldg., Toledo 1, Ohio.

6-4. Look to Fiberglas for the Complete Line of Sound Control Products (A52-8)

6-5. Sound Control Products, A.I.A. 39-B (AC6.A1)

specialized equipment

8-6. Chart-Pak for Making Industrial Layouts, 9-p. brochure describing a new method of preparing industrial layouts. A variety of pressure-sensitive tapes representing material conveyors and structural components, scaled ¼"=1' and other tapes consisting of broken and solid lines, reference numbers, letters, and colored arrows are represented. Also information on plastic layout boards and pressure-sensitive grid sheets for machine and equipment templates. Chart-Pak Inc., 104-8 Lincoln Ave., Stamford, Conn.

surfacing materials

9-4. Inexpensive Luxuries by Hako (AT-200), 8-p. bulletin listing features of asphalt tile flooring products, including parquetry and terrazzo designed tile. Installation procedure, color chart, and photos of possible design combinations. Hachmeister-Inc., 2332 Forbes St., Pittsburgh 30, Pa.

9-5. Specification for Installation of the Mosaic Tile Company Conductive Floor Tiles, A.I.A. 23Q (13), 2-p. bulletin giving information on a conductive flooring adhesive and a vitreous ceramic, electrically conductive tile flooring for hospital operating rooms and other areas listed as Class I Group C Hazardous Locations. Description of "thin-set" method of installation, detailed information on materials, and setting procedure including installation, grouting and finishing, and cleaning and protection. Miracle Adhesives Corp., 214 E. 53 St., New York 22, N. Y.

(To obtain literature, coupon must be used by 6/1/53.)

(We request students to send their inquiries directly to the manufacturers.)

PROGRESSIVE ARCHITECTURE, 330 West 42nd Street, New York 36, N. Y.

I should like a copy of each piece of Manufacturers' Literature circled below.

1-5	1-6	1-7	1-8	2-9	2-10	2-11	2-12
2-13	2-14	2-15	3-9	3-10	3-11	3-12	3-13
3-14	3-15	4-5	4-6	4-7	4-8	4-9	5-2
5-3	6-3	6-4	6-5	8-6	9-4	9-5	

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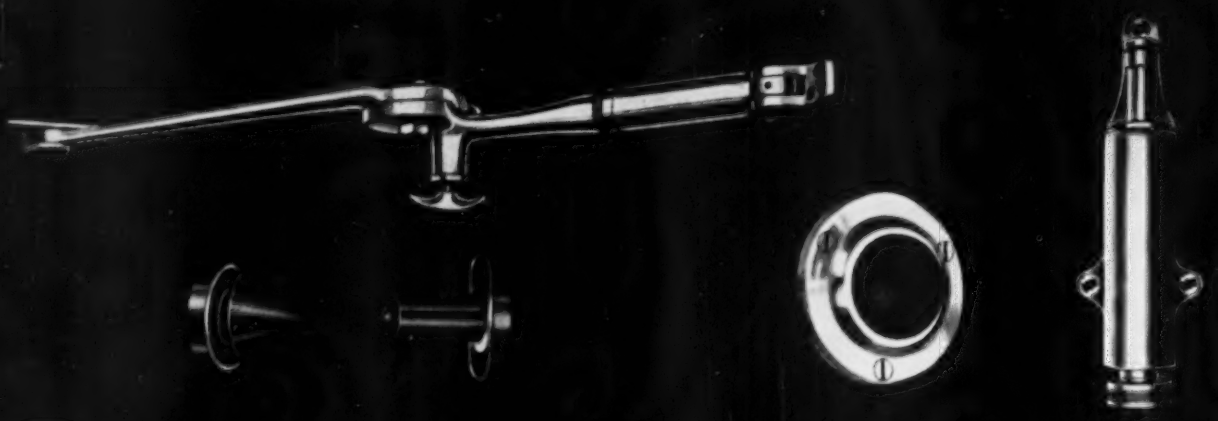

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by Ben John Small

spec small talk

"x" marks the spot

There is a story going around concerning an overly critical plastering inspector who relished condemning large areas of plastering work which had very slight imperfections. He behaved like a psycho-ceramic (crack pot) as he marked up area after area with a greasy red crayon. The contractor's pressure rose with each new onslaught. He counterattacked and had the inspector discharged by showing the chief inspector perfectly good areas which unbeknownst to others he had marked up similarly with an identical crayon.

brand vs. performance

A friend of mine who sometimes acts as consultant to the mortgage department of an insurance company got a questionnaire the other day which asked, among other things: "In checking specifications do you guard against the inclusion of unknown or off-brand materials?" The answer choices were "always," "frequently," "sometimes," "never." It seems fairly obvious that such a question will draw heavy "always" and "frequently" response, and very few "never." Suppose, on the other hand, the question had been worded differently, something like: "Regardless of whether brand names are specified, do you make sure that the materials called for will perform satisfactorily under the conditions that are reasonably likely to occur?" Again the responses would probably tend toward the positive. What is an "off-brand?" Well, an off-brand is a brand I haven't used or heard of. Is it any good? Maybe, maybe not. I'm not going to use it just because it has a name. But I'm not going to reject it because I don't know anything about it yet. The manufacturer may make great claims about its characteristics; often he even believes them. Sometimes he's right. And the only way to find out is to test it. Of course, time, or expense restrictions may prevent such tests. Or the tests may not be as conclusive as we'd like. But, as open-minded men know, many of the standard brands of today were the "off-brands" of yesterday. In 1776, among the nations of the world, the United States of America was an off-brand.

density

It all started innocently enough. Our client instructed us that all combustible low-density boards be protected with a fire-retardant paint. This requirement puzzled me because I did not (and still do not) know the limits ascribed to low, medium, medium heavy, heavy, and extra heavy density boards. Federal Specification LLL-F-311 requires "Fiber - Board; Hard - Pressed, Structural" to have a minimum density of 60 pounds per cubic foot. *Federal Specification LLL-F-321b* which describes "Fiberboard; Insulating" does not refer to densities. Most roof insulating fiberboards weigh approximately 15 pounds per cubic foot. Somewhere I have read that wood, wood fiber and nonlaminated paper boards having a density of over 24 pounds per cubic foot qualify as hardboard. Standard hardboard weighs approximately 67 pounds per cubic foot (denser than most woods) and tempered hardboard is slightly heavier than the standard. Help!

definition department

Do you remember what is meant by "united inches" in glazing terminology?

flame resistance

Speaking of definitions the following excerpt from the *Acoustical Materials Association Bulletin XIII-1951* should serve as a useful reminder:

"The indiscriminate use of terms such as "fireproof," "fire-resistant," "flame-proof," etc., in specifications has created confusion among architects, consumers, and the public. All such terms are relative and should be compared with some recognized standard. The Acoustical Materials Association refers to 'flame-resistance' as a term embracing various degrees of the above terms. By specifying products according to the tests and classifications listed and defined under a recognized specification such as SS-A-118a, specifying agencies can establish and define limits of 'flame-resistance' according to definite standards. "The classifications to 'flame-resistance' listed and defined in *Federal Specification SS-A-118a* are:

Incombustible
Fire-Retardant
Slow Burning
Combustible

"A suggested specification would read as follows:

'Acoustical tile shall meet the requirements of the (Incombustible, Fire-Retardant, Slow - Burning, Combustible) classification of *Federal Specification SS-A-118a* when tested under that method.'

"Reference to 'flame-resistance' or similar terms not tied to a definite standard tends to be meaningless."

costly words

I wonder how it would be if fees for specification writing were based upon a price per word. I am serious about this! If renderers can do it, why not specification writers. I have before me a proposal from a professional renderer reading as follows: "prices—25 to 75 cents per square inch, depending upon size of drawing and amount of detail." My proposal would be one-tenth of one cent per word, no streamlining, and no charge for words leading to extras. Should you engage me on the price per word basis, do not expect me to say "plywood" for one-tenth of one cent when I can earn two and two-tenths cents on "a cross-banded assembly made of layers of veneer, or veneer in combination with a lumber core or plies joined with an adhesive". I could expand this another seven-tenths of a cent worth, but after all I do have a conscience (I mean—a sense or consciousness of the moral goodness or blameworthiness of one's own conduct, intentions, or character, together with a feeling of obligation to do right or be good—hence, a faculty, power, or principle conceived to decide as to the moral quality of one's own thoughts or acts, enjoining what is good).

In this attractive interior the door integrates with, rather than interrupts, the decorative plan of the room. Architect: John B. Danna, Dallas, Texas.

BRIEF DATA

Glass—⅜" thick. Muralex pattern on both surfaces.

Tempered—Three to five times stronger than untempered glass of same thickness.

Reversible—Can be used right or left hand.

Standard Sizes—2'6" x 6'8" 3'0" x 6'8"
2'8" x 6'8" 3'0" x 7'0"

—also 4 sizes for openings of these dimensions with proper allowance for clearances.

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bars

Immediately obvious in all of the designs presented on the following pages are the various ways of concealing the bars when they are not in use. In some cases, section of walls swing open, doors jackknife, or panels slide. They are all built in walls and completely attractive, opened or closed. An absolutely necessary requirement is that finishes—on shelving, work areas, and counter tops—be alcohol proof. Formica, Micarta, stainless steel, glass, and specially finished woods are used for these surfaces. Efficiency and ease of operation has in no way detracted from fine design.

location | **den-study, house, Hillsborough, California**

architects | **Campbell & Wong**

data

Interior finish: stained plywood

exterior finish: clear-lacquered walnut veneer

shelving: pine

lighting: side-lit/ 18" lumiline

counter top: oak/ heavily bar-finished

hardware: custom hardware on jackknife doors

Conveniently located for either indoor or outdoor service, this under-counter bar is completely concealed when closed. Sliding doors cover the shelves, and a top on the sunken sink completes the counter. When being used for out-of-doors, a wood panel jackknifes to the ceiling to permit easy access. Convenient, workable, and attractive in an uncluttered, simple way, this unit performs its job well. *Photo: Roger Sturtevant*

residential bars

location	living room, house, Los Angeles, California
architect	Kazumi Adachi
associates	Dike Nagano, Hideo Takayama

data

interior finish: white Micarta
exterior finish: white Micarta
shelving: ¼" plate glass
lighting: "slimline" fluorescent
counter top: white Micarta
hardware: concealed/ touch latches
equipment: 12" x 12" sink

Completely executed in white Micarta, this bar is in a living-dining area of a playroom. Here white has been used as an accent to a natural-finish ash siding and yellow-painted walls. Opened or closed, it is neat and orderly, and maintenance is simple, with never any fear of harming the finish. Here is a perfectly honest, straightforward design, handsome in its plainness. Photo: Julius Shulman

No attempt has been made to conceal the fact that this wall serves a purpose. The designer has played up the interesting space division of the combination bar, television set, and radio-phonograph by using a mahogany frame in contrast to the light Korina and grass-cloth panels. It's a nice pattern on the wall—certainly appealing to the eye. The woven texture in the lower right horizontal panel completes and enhances the design.
Photos: Dean Stone; Hugo Steccati

data

interior finish: painted plywood
exterior finish: clear-lacquered Korina veneer mahogany trim
shelving: glass
lighting: flush light over bar sink
counter top: mahogany, bar-varnished
hardware: custom-made for vertical-slide doors
equipment: stainless-steel sink

location	living room, apartment, San Francisco, California
architects	Campbell & Wong

location	living room, house, West Los Angeles, California
architect	Victor Gruen
associate	R. L. Baumfeld

data

interior finish: wood core, lacquered/ architect-designed/ H. D. Cowan Furniture Co., 165 Long Beach Ave., Los Angeles, Calif.

exterior finish: Honduras mahogany/ manufactured and installed by H. D. Cowan

shelving: ¼" plate glass/ Libbey-Owens-Ford Glass Co., Nicholas Bldg., Toledo 3, Ohio

lighting: "Warm-tone" fluorescent/ General Electric Co., 1 River Rd., Schenectady, N. Y.

counter top: black Formica/ The Formica Co., 4620 Spring Grove Ave., Cincinnati 32, Ohio

hardware: concealed hinge for lower panel/ pins with guides for upper disappearing panel/ Soss Mfg. Co., 21777 Hoover Rd., Detroit 13, Mich.

equipment: stainless-steel, special-order sink; under-counter refrigerator

One of the most elaborately designed, by Victor Gruen, is the fireplace wall of a living room — a study in elegant simplicity. When closed, there is not the slightest suggestion that an engineered bar is in back. The wall, as a unit, is exceptionally fine in its space distribution. The lower-left section, shelved on the back to hold glasses, swings away from the wall and the top sections slide into the closet, convenient to the living room, yet still inconspicuous when open. Rating: Masterful.

Photos: Julius Shulman

residential bars

location | living room, house, Brooklyn, New York

architect | Arthur Louis Finn

data

cabinet work: Stuyvesant Fixture Co., New York, N. Y.

interior finish: mirror/ Joseph Rosenfeld, New York, N. Y. Chinese tea-paper/Laverne Originals, 160 E. 57 St., New York, N. Y.

exterior finish: upper portion, weather-greyed cedar; lower portion, birch with ebonized finish

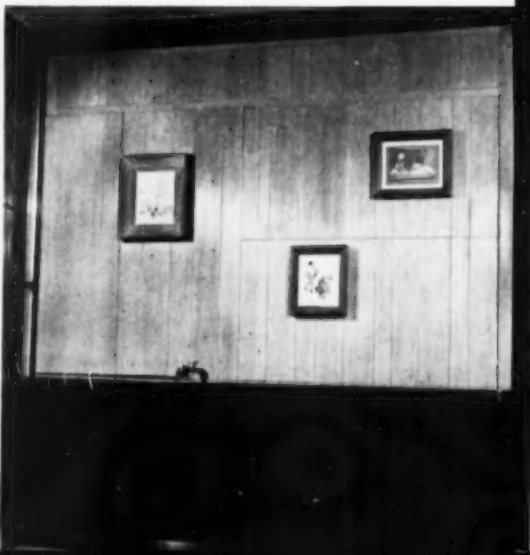
shelving: plate glass

counter top: black Formica

hardware: concealed hinges/ Soss Mfg. Co., 21777 Hoover Rd., Detroit 13, Mich., all other hardware/ custom-made

equipment: refrigerator/custom-made/ Meltz Co., New York; Monel-metal sink

Not only a bar appears, when panels are moved, but chairs as well. The top section of weathered grey cedar opens to reveal a bar large enough to allow a bartender to work comfortably. The framed pictures are handles for the panels. The bottom panels of birch with an ebony finish are backs of four chairs. The bar, with the cabinet that houses the television set, is practically all of an eleven-foot wall. The man of the house sometimes uses the room for business conferences—or simply as a retreat. *Photos: George Cserna*



data

interior finish: stainless steel, lacquered wood/ lacquer, W. P. Fuller & Co., Mission & Beale Sts., San Francisco, Calif.

exterior finish: Philippine mahogany on vertical sliding door/ U.S. Plywood Corp., 55 W. 44 St., New York 18, N. Y., Koroseal plastic on lower panel

shelving: ¼" glass/ Libbey-Owens-Ford Glass Co., Nicholas Bldg, Toledo 3, Ohio

lighting: "Warm-Tone" fluorescent, General Electric Co., 1 River Rd., Schenectady 5, N. Y.

counter top: black Formica/ The Formica Co., 4620 Spring Grove Ave., Cincinnati 32, Ohio

hardware: balanced suspension for vertical sliding panel/ Acme Sash Balance Co., 1626 Long Beach Ave., Los Angeles, Calif.

equipment: stainless-steel sink/ special order

Another combination of music and bar is shown in this living room. A vertical sliding panel reveals the bar. Textures of louvered wall above the radio and slightly padded plastic covering on the panel below the bar add to the attractiveness of the unit. Accessible to living and dining room, a small space has been fitted to operate successfully. A built-in sink completes the job.

Photos: Julius Shulman

location	living room, house, Los Angeles, California
architect	Victor Gruen
associate	R. L. Baumfeld

bars

location	delegates lounge, UN Conference Building, New York, N. Y.
director of planning	Wallace K. Harrison
deputy director	Max Abramovitz
interior design	Abel Sorenson

A meeting place for delegates, the main lounge is as near perfection as possible—timeless in design, clear in execution, and a real tribute to co-operative effort. All furnishings, although efforts of many designers from many countries, have the unity of good design. A great expanse of cedar-colored carpet, large uncluttered wall areas painted grey, with the north window wall framed in a handsome textured fabric, and a high ceiling all contribute to the mood of ease, comfort, and restfulness. Mainly, the furniture's fineness is its simplicity of line, but especially attractive is the accent of large fan-back wooden armchairs along the window wall. The bar is used for serving coffee in the morning, light luncheons, and beverages. Sole adornment, the bas-relief map of the world, has a tan and burnt Sienna coloring—close in value to the mahogany bar and circular baffle, which conceals the bar and also serves as a storage closet for supplies.

All lighting is from the ceiling, with the exception of the standing lamps on the south wall. On clear days, the room is flooded with sunlight.

Photo: Gottscho-Schleisner

data

cabinetwork

Bar: Cuban mahogany/ designed by UN Headquarters Planning Office/ executed by Amman & Goetz Co., Inc., Lafayette St., Bronx, N.Y.
Storage Baffle: mahogany slats on rattan backing.
Flower boxes: designed by UN Headquarters Planning Office/ executed by Amman & Goetz.

furnishings and fabrics

Wooden Arm Chairs: (Bar area) mahogany/ Jacob Kjaer, Copenhagen, Denmark.
Upholstered Chairs: #70/ birch/ grey and red Saran upholstery/ Knoll Associates, Inc., 575 Madison Ave., New York 22, N. Y.
All Tables: mahogany/ designed by UN Headquarters Planning Office/ executed by Snyder's Ltd., Ontario, Canada.
Fan-back Chair: "Windsor"/ ash, with teak arms/ Johannes Hansen, Copenhagen, Denmark.

bas-relief mural

Lounge Chairs and Sofas: off-white and dark brown leather upholstery/ Heals Contract Ltd., Liverpool, England.
Carpeting: cedar color wool/ Tapis Francais, Paris, France.
Drapery Fabric: natural-color wool with metallic thread interwoven/ Jud Williams, 55 East 55 St., New York, N. Y.

lighting

Downlights: Edward F. Caldwell & Co., 101 Park Ave., New York, N. Y.
Floor Lamps: triple-stem/ designed by UN Headquarters Planning Office/ executed by Koch & Lowy Mfg. Co., 101 Park Ave., New York, N. Y.

mural

Wall Map: natural-ground, cedar-color relief/ designed by UN Headquarters Planning Office/ executed by Lester Associates, Westchester, N. Y.

walls, ceiling, flooring

Walls: plaster/ paint/ M. J. Merkin Paint Co., 1441 Broadway, New York, N. Y.
Ceiling: acoustic plaster/ U. S. Gypsum Co., Inc., 300 W. Adams St., Chicago 6, Ill.
Flooring: concrete slab.

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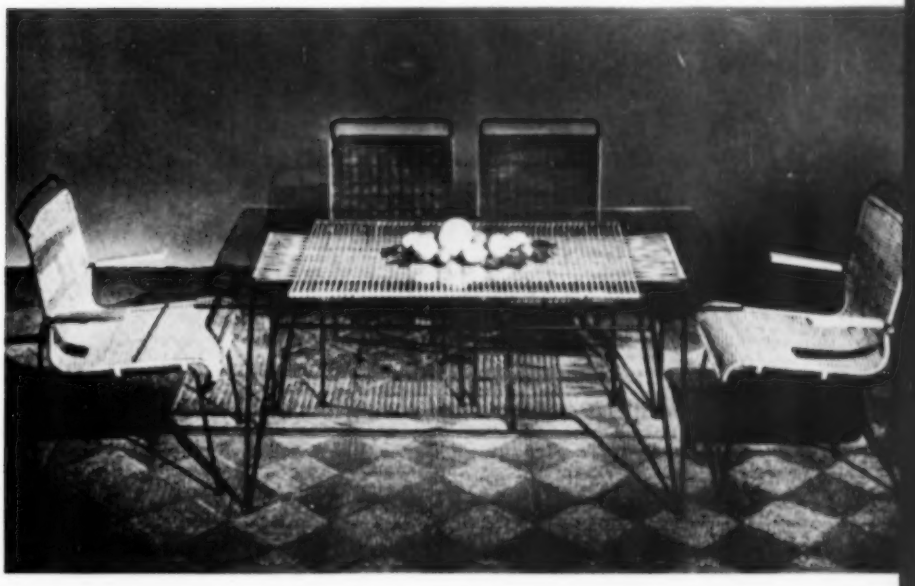

Room Dividers: (from Birchcraft Casual Modern Collection) dowel legs, three shelves/ hand-rubbed butternut finish/ 30" by 11", 28" high/ **retail: $19.95/ T. Baumritter Co., Inc., 171 Madison Ave., New York, N. Y.**

Dining Furniture: "Sol-Air" group/ wrought iron, woven rattan, glass/ available in black or red finish/ #40-G table, 36" by 72"/ **retail:** $165; #81-C arm chair/ **retail:** $51.70; #80-C side chair/ **retail:** $49/ designed by Swanson Associates/ **Ficks Reed Company, Grand Rapids, Mich.**

L-Shaped Office: "E Unit"/ wall panels of laminated ribbed core/ glass screens/ desk top of natural wood/ entire unit 48" by 54" (Also available 48" by 60" or 60" by 60"/ **retail:** $149.50 for basic unit/ GR Products, Inc., 140 Federal Square Bldg., Grand Rapids, Mich.

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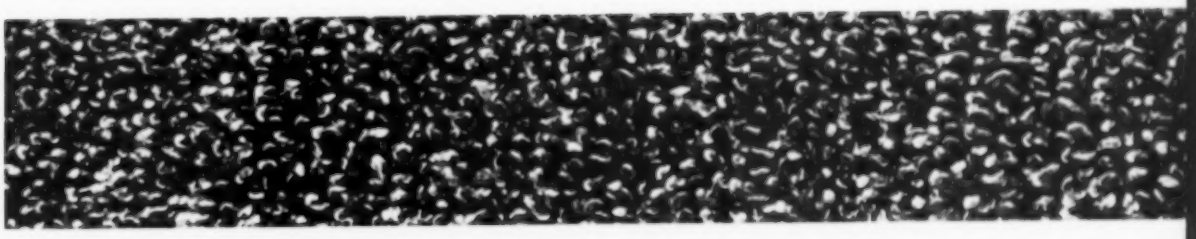
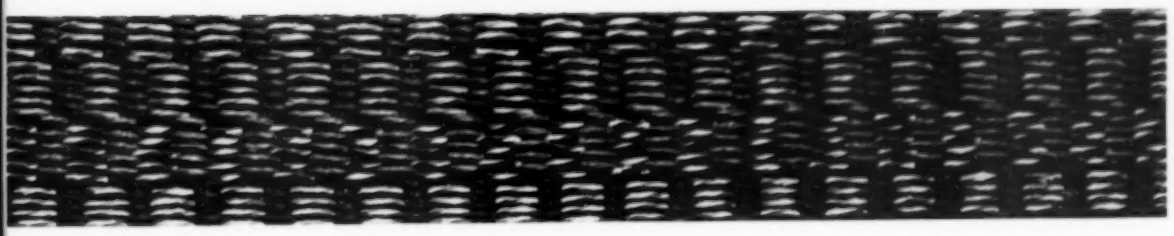
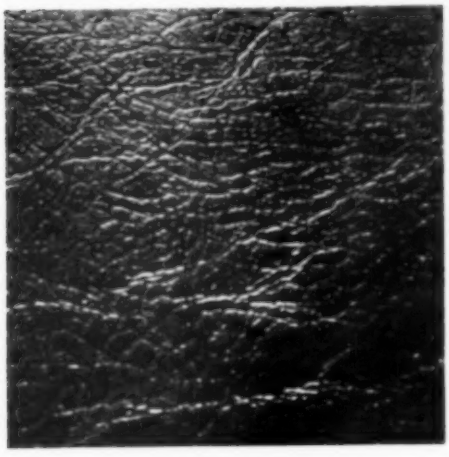
Carpet: "Waipoint"/ Fiber E blended with other man-made fibers, backed with latex/ uncut, low-loop pile/ available in any size, shape, or color/ designed by John Gerald and Katherine Kinnane/ **retail:** $14.95 per sq. yd./ **Waite Carpet Co., Oshkosh, Wis.**

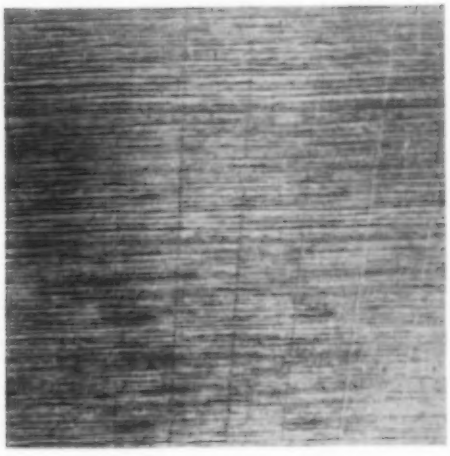




Fibre rug: "Braid-wai"/ weave has three-dimensional effect/ designed by John Gerald and Katherine Kinnane/ **retail:** $27.95 for 9' by 12' size.

Wall Covering: vinyl fabric in seven decorator colors: dark wine, light coral, light blue-green, light gray-green, tan, sunshine yellow, light gray/ available in special colors/ 18-gage rolls are 54" wide/ washable, scuffproof/ **U. S. Plywood Corp., 55 W. 44 St., New York, N. Y.**





Wall Covering: "Bolta-Wall"/ Vinylite resins laminated to rubber-saturated paper backing/ surface-textured Bamboo (above) and Leather Grain finish/ may be applied to most smooth, dry surfaces with special adhesive/ rolls 48" wide, 25 yards long (also available in Bamboo pattern in tile size) **retail:** 50 to 60 cents per sq. ft./ **Bolta Products Sales, Inc., Lawrence, Mass.**

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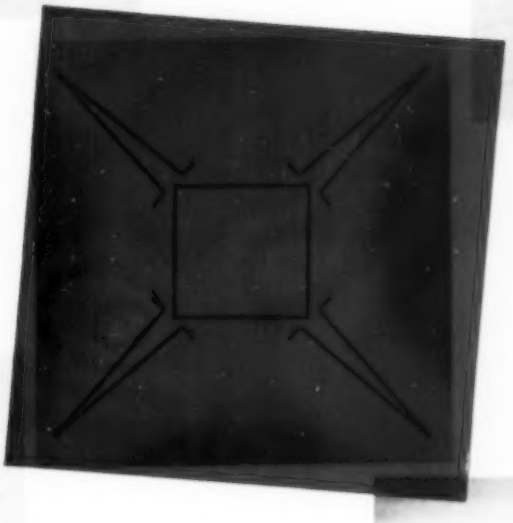

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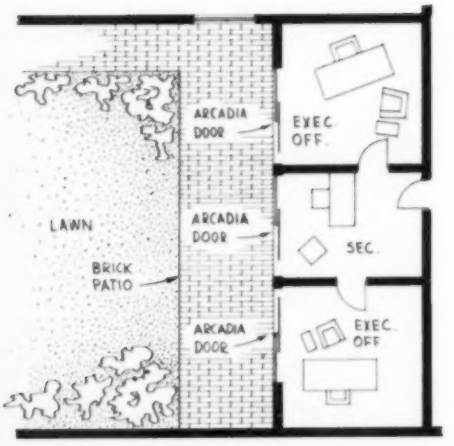

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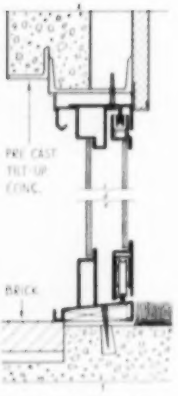
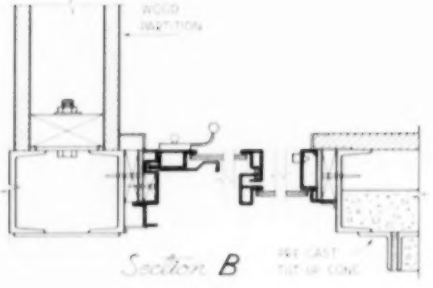
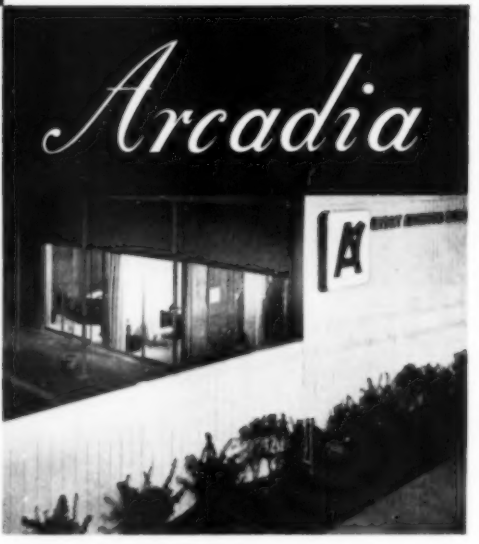


Section A



Section B



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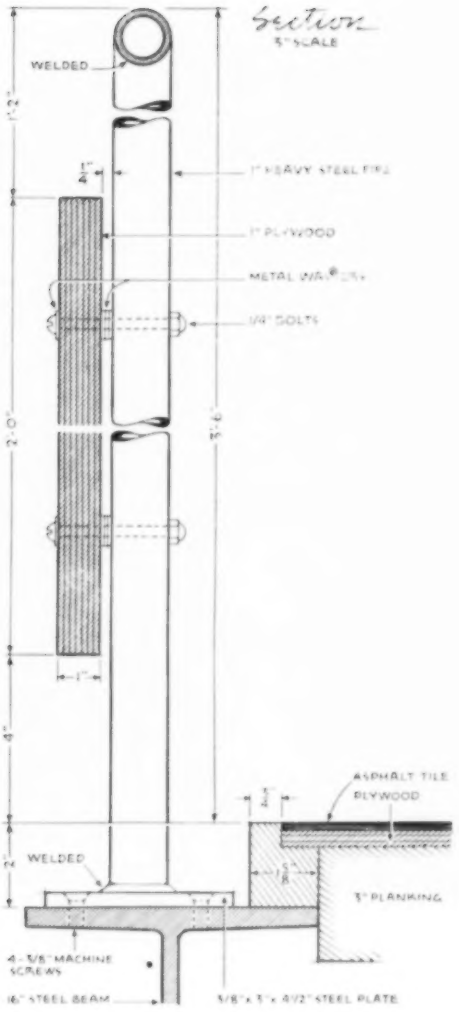
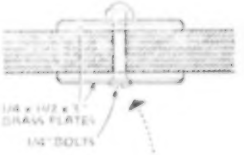
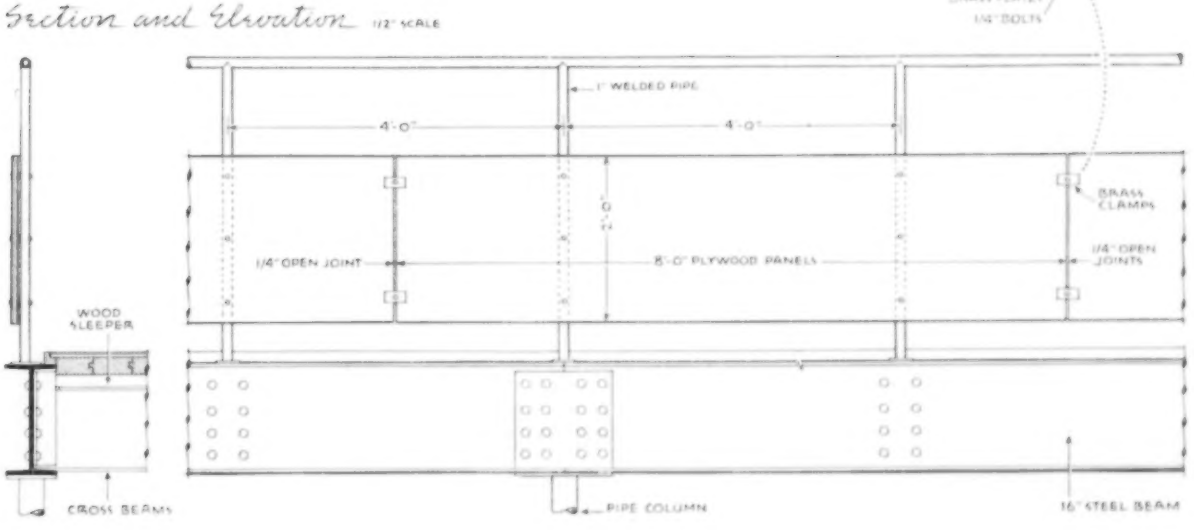
Monrovia, Calif.
George Vernon Russell, Architect

library: balcony railing



ROGER STURTEVANT





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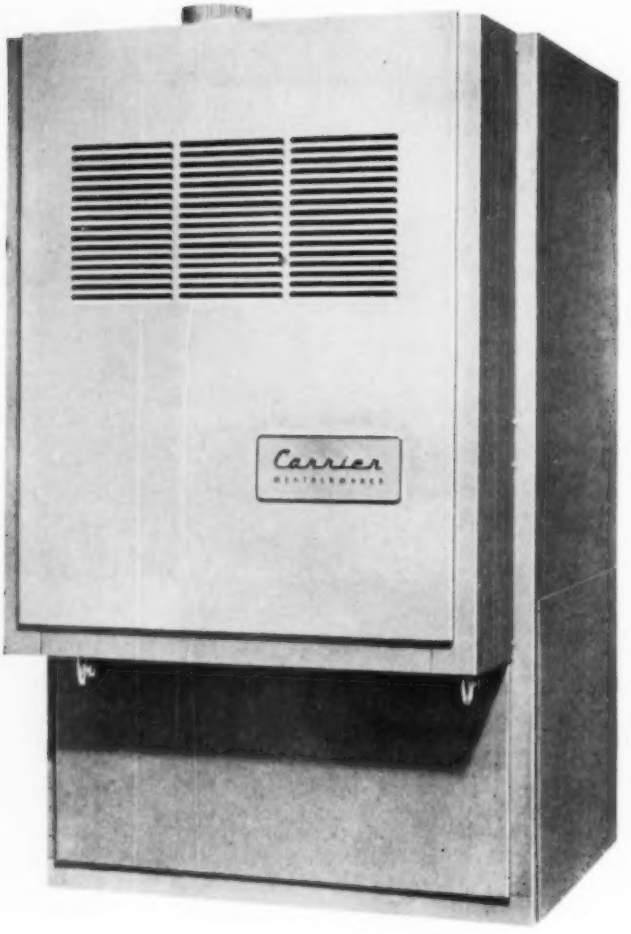

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$\frac{1}{16}$" and $\frac{1}{8}$": factory or natural finish.

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Installed prices vary with size and condition of underfloor: approximate cost, based on minimum area of 1000 sq. ft. over cement underfloor, 60¢ per sq. ft. for $\frac{1}{16}$" gauge and 70¢ per sq. ft. for $\frac{1}{8}$" gauge.

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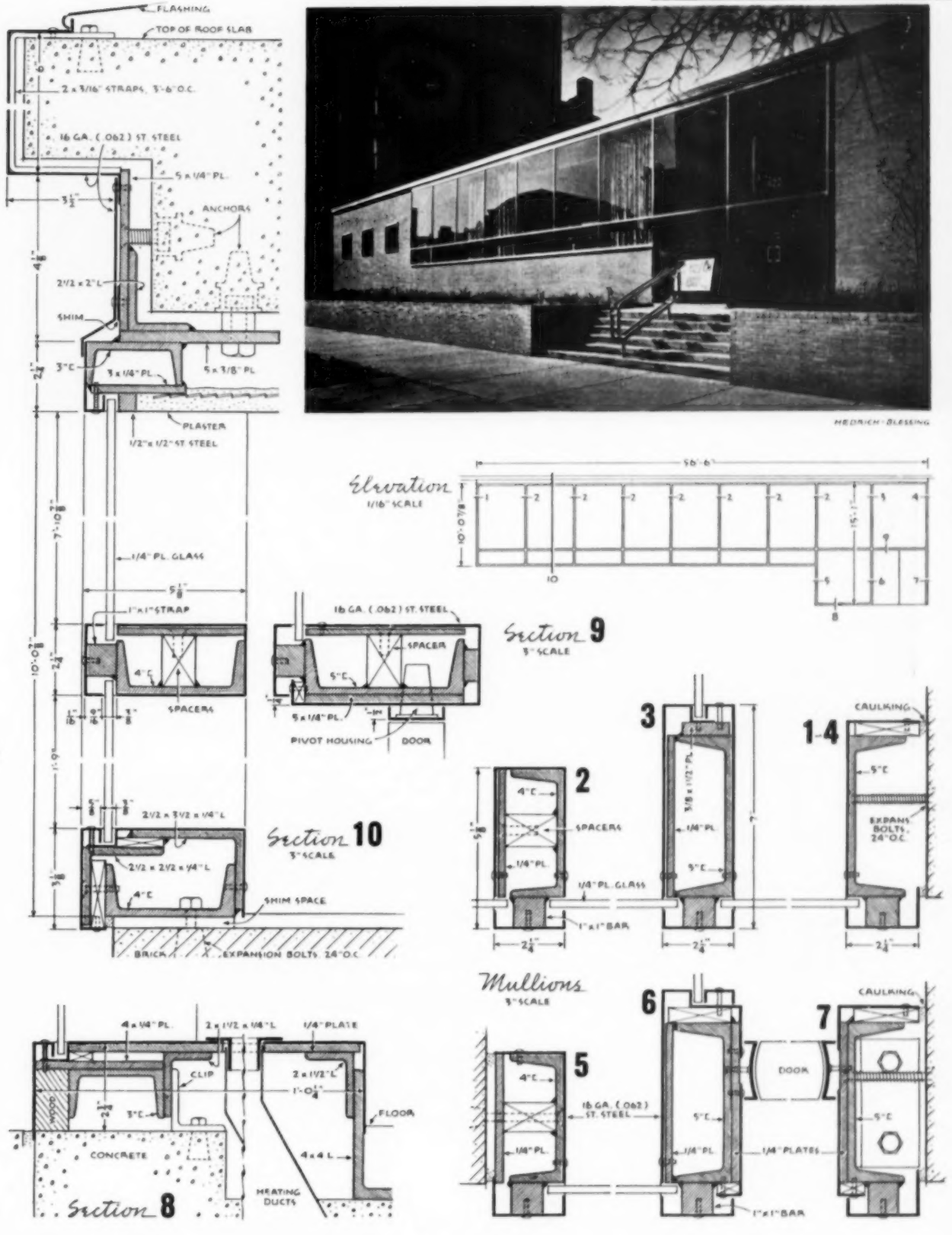

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Skidmore, Owings & Merrill, Architects

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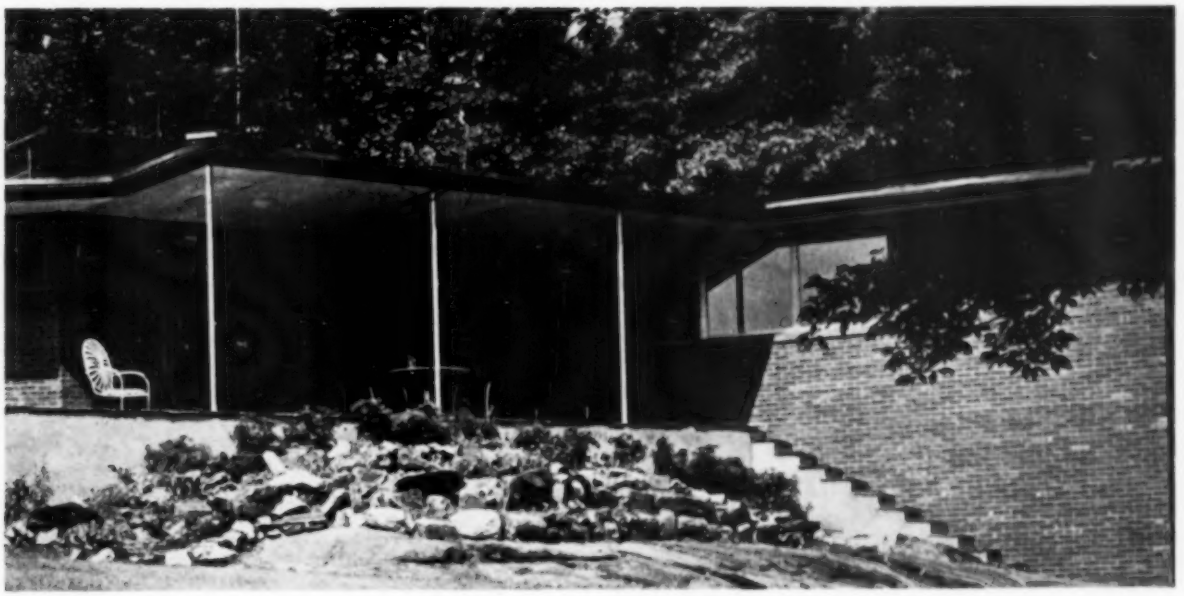
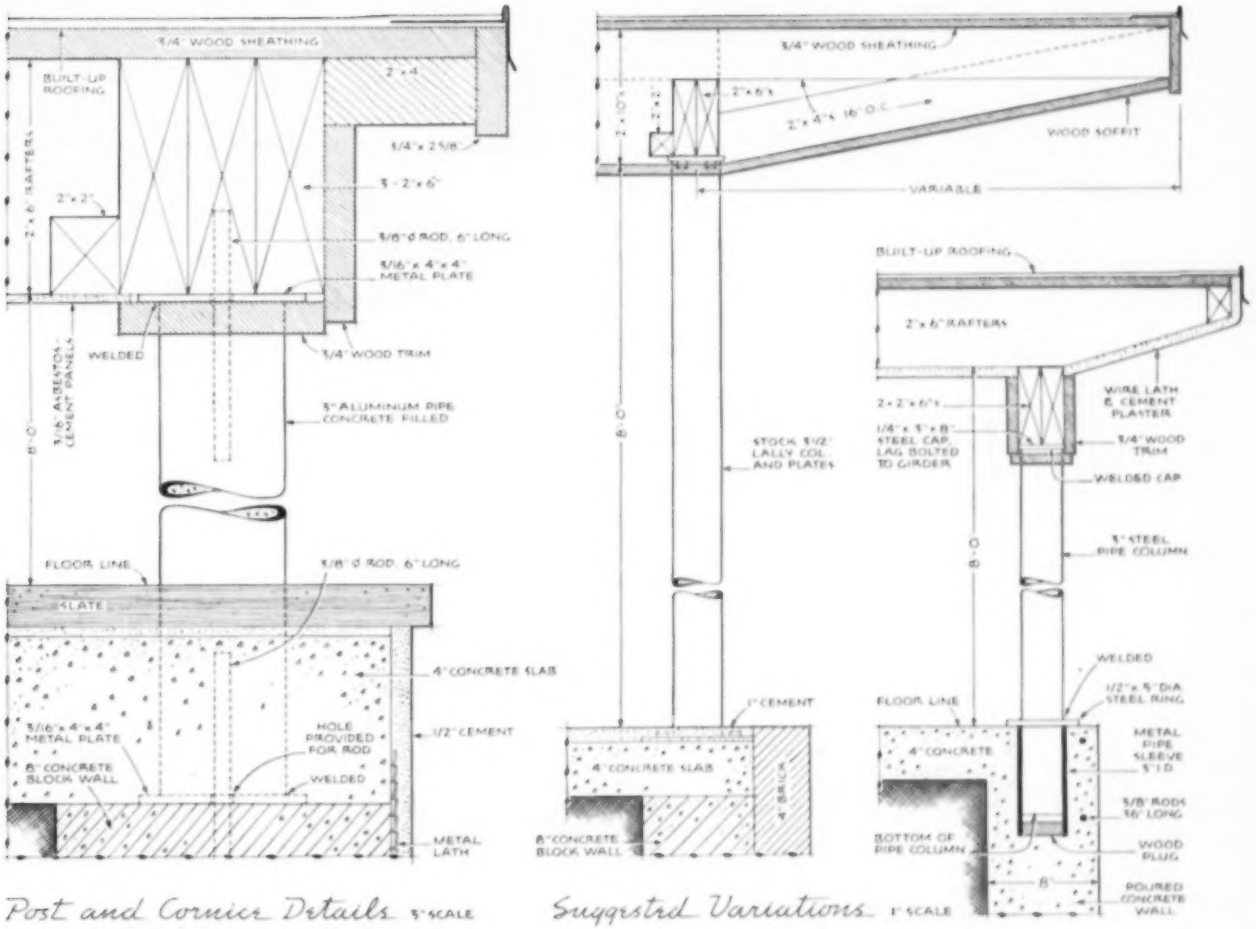
house: exterior roof supports



SUZANNE SZASZ



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Caleb Hornbostel, Architect

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by Bernard Tomson

it's the law

Correspondence commenting on the January column (which considered the legal implications in the practice of architecture by engineers) included a letter from O. Clarke Mann, a structural engineer and a member of a State Legislative Committee in Tennessee. The letter itself appears in VIEWS this month. The Court's opinion, mentioned in the letter, is so stimulating and is of such universal interest, that I am devoting the column to direct quotations from it:

"The bill was filed in this cause by the complainant, who is a licensed engineer, against the members of the State Board of Architectural and Engineering Examiners, praying, among other things, for a declaratory judgment and decree defining the rights of complainant as a registered engineer under the terms of the Act.

"Intervening petitions were filed on behalf of the Tennessee Chapter of the American Institute of Architects and on behalf of the Tennessee Society of Professional Engineers . . .

"Proof was taken by complainant and defendants, as well as the intervenors, which proof included the depositions of Board Members, as well as other eminent architects and engineers.

"The statute appears in Williams Annotated Code at Sections 7098-7112, and provides among other things (7098):

" 'In order to safeguard life, health and property and promote public welfare, by requiring that only properly qualified persons shall practice architecture and engineering in this state . . .'

and further requiring that a person seeking to practice architecture or engineering shall submit evidence that he is qualified and must be registered, and making it unlawful for persons to practice architecture or engineering unless duly registered, etc.

●

"A definition of *architect* used by some of the Courts, quoted from Webster's Dictionary, is 'one skilled in practical architecture; one whose profession it is to devise the plans and ornamentations of buildings or other structures and direct their construction.' The definition found in the American College Dictionary is 'one whose profession it is to design buildings and to superintend their construction.' While the same dictionary defines *engineer* as 'one versed in the design, construction and use of engines or machines, or in any of the various branches of engineering; one trained in engineering work; *one who plans, constructs, or manages as an engineer*; one who arranges, manages or carries through by skillful or artful contrivance.'

" 'Engineering' is defined as 'the art of science of making a practical application of the knowledge of pure science such as physics, chemistry, biology, etc.; the action, work, or profession of an engineer.' In the deposition of N. W. Dougherty (pp. 74, 75, 76) this appears: . . .

" 'This Committee has made a very careful study of definitions of 'architect,' 'architecture,' 'engineer,' and 'engineering,' but it was found that any definition of 'engineering' would be so general as to include too much, or too specific to be sufficiently general, or too voluminous to be suitable to incorporate in a law. Some have endeavored to include in a definition of 'engineering practice' all sorts and kinds of construction work, but engineering includes investigations as well as plans and no catalogue can well be prepared sufficiently detailed to include all sort of engineering activities. Both architecture and engineering are broad terms involving construction and necessarily there can be no sharply drawn distinction. Architects in the broadest sense are engineers even if usually architecture is associated with ideas of artistic or decorative features. Architects are eligible to membership in the American Society of Civil Engineers and several architects are members.'

"From the definitions given by the witnesses, as well as those hereinbefore quoted, and from this record as a whole, it appears as a fact that cannot be seriously questioned that the functions of these two professions, viz., architecture and engineering, so overlap that there is no practical way to draw a clear line of demarcation between the two.

"As applied to the field of building construction, it seems perfectly clear from the proof and the record as a whole, as well as from facts of which the Court might take judicial knowledge, that an architect, in order to successfully pursue his profession must be trained in certain branches of engineering, while, on the other hand, an engineer trained in the field of construction might be able to design many types of buildings and many of the components of various buildings with as much scientific skill as an architect, even though the engineer might not be trained in the art of making buildings artistically beautiful.

"The proof discloses that the great TVA organization, which has built many types of structures, including dams, power plants, administrative offices, residences, and buildings of all kinds, has a large staff of engineers (about 550 in number) and a small staff of architects (about 30). (See Dep. Tour p. 97.)

●

"Significantly, the head of the whole division that supervises the design and construction of all of their buildings, dams, etc., is an engineer, and has been throughout the history of the great Federal authority. (Tour pp. 103-105) Tour testified that the chief design engineer of TVA is R. A. Munroe, a civil engineer . . .

"All the foregoing is by way of saying that it is the judgment of this Court that it cannot define and delineate the functions of architects and engineers in such way as to draw a line of demarcation between them which could be successfully applied in practice. This is emphasized in the record since it appears that the architects and engineers themselves could not agree on such a definition and division of functions.

"The statute involved herein is a regulatory measure. The Tennessee Legislature, as hereinabove stated, has not attempted to define and delineate the practice of architecture and engineering as separate fields for purposes of regulation, and unless and until the Legislature makes such a definition and lays down the requirements of practice in those fields the Court will not undertake to invade this field of legislation.

"From all of the above it thus follows that the prayer for a declaratory judgment defining and delineating the practice of architects and engineers must be denied."

Otis

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BETTER ELEVATORING IS THE BUSINESS OF OTIS

by Carl Feiss

out of school

This is never a current events column, if for no other reason than it is written just about two months before you receive the copy of the magazine you are now opening. For instance, this is now the fifteenth of February. By the time you imbibe the sparkling wine of these words, you, the world, and I will be sixty days younger. Winter will be over. Spring will be burgeoning. I never liked that word "burgeon" in this context. It is one of those heavy, plush-covered words that is completely out of keeping with the light and hopeful quality of the season. Who likes to think of a jonquil burgeoning, or a dogwood, or the first robin? Anyway, what I would like to convey is that the dismal glooms of early February, which age all of us, should be dispelled by the time the sap that rises in the world has begun to flow. I hope P/A has chosen a bright and cheerful cover, that President Eisenhower has found a formula for world peace, that we will all be tilling the ground in our gardens, and that mankind will face the future with calm, hope, and tolerance.

For those of us who fear the red blood that rises in all of us in this season, who dread the almost uncontrollable and even nonconforming thoughts which surge through our timid and winterbound soul at this moment, may I with trepidation commend to you the following verses from the Phi Beta Kappa Poem delivered by W. H. Auden at Harvard in 1946:*

Thou shalt not do as the dean pleases,
Thou shalt not write thy doctor's thesis
On education,
Thou shalt not worship projects nor
Shalt thou or thine bow down before
Administration.

Thou shalt not answer questionnaires
Or quizzes upon World-Affairs,
Nor with compliance
Take any test. Thou shalt not sit
With statisticians nor commit
A social science.

Thou shalt not be on friendly terms
With guys in advertising firms,
Nor speak with such
As read the Bible for its prose,
Nor, above all, make love to those
Who wash too much

Thou shalt not live within thy means
Nor on plain water and raw greens.
If thou must choose
Between the chances, choose the odd;
Read *The New Yorker,* trust in God;
And take short views.

* "Under Which Lyre, A Reactionary Tract for the Times" from NONES by W. H. Auden. Random House.

I suppose that I should not have wasted the precious space grudgingly spared from the advertising pages by my friends in Reinhold's business office for anything so remote from architecture as a poem. I

(Continued on page 150)

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. . . help eliminate drafts and air currents . . . keep out dirt and dust. Made of extruded bronze, aluminum or nickel, they are simple, practical, rugged, easily installed and adjusted. Michaels Adjustable Astragals are available in several styles, two of which are shown below.

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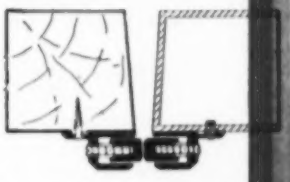
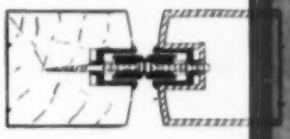
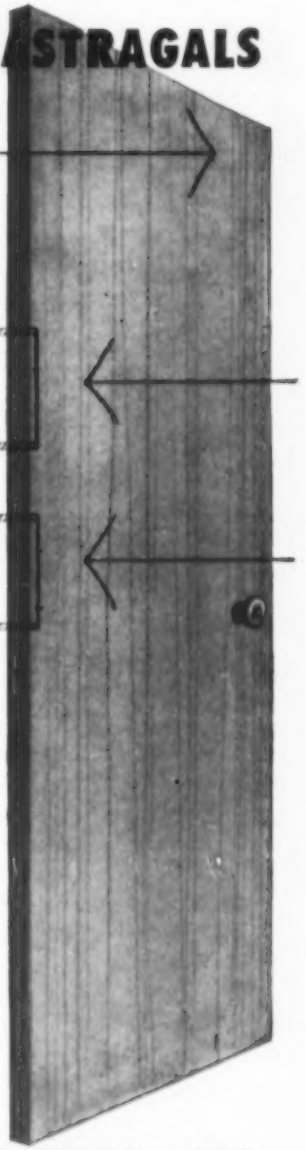
may be applied to either wood or hollow metal bevel doors, or as a stop bead.



Type E

is for bullnose hollow metal or wood doors (double acting).





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- Check Desks (standing and wall)
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Literature on any or all Michaels products will be sent on request.

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out of school

(Continued from page 149)

apologize and thank them for their generosity. The rest, I hasten to assure them, will be germane to purpose of this weighty tome.

•

Permit me to spend a few minutes here in speculation on trends in architectural education in this country as I have been able to discern them during the past year. Not that any one trend is easily identified. However, there is a curious compartmentalization occurring which may or may not be permanent or even important. I wish I really knew. Also I wish I were free to name names of schools in which events are taking place which may be important for us to assess either because they are good or bad or because they are exciting or dull—very dull. I also wish I could give credit where, even in lack of perspective, it appears to be due. Choosing sides must be avoided in an effort at all times to remain impartial. Therefore if in the course of reading what I am about to write, you identify names and places, may I assure you that such identification is your responsibility and not mine (or that of this periodical, which incidentally has long ago absolved itself from anything that I say—an act of pure cowardice on its part).

It is very much to be regretted that at the time I am writing this, the final issuance has not taken place of the report of the A.I.A. Commission for the Survey of Education and Registration—a report discussed in anticipation many times in this column. The actual statistical survey, as you may remember, was made in 1950. Dr. Burdell, the Commission Chairman, partially reported on the progress of the report at the two last A.I.A. conventions, and we duly discussed his reports in this column—in fact scooped the Octagon on the first, much to its chagrin. (It's actually a badly biased hexagon with a wen, if you're going to be accurate, which may account for the inferiority complex in such matters.) As I write I am told that the final editing is now taking place. Perhaps there is a meager possibility that the report will be ready for study by curriculum builders by this coming Fall, and that it may serve some purpose in modifying the philosophy of admissions, programs, and course design by the opening of the school season in the Fall of 1954. I can't see, even with publication this Spring—with luck, that it would be able to serve the 1953-54 season to any degree. It takes time to absorb ideas and then apply them, and in this case we can only hazard a guess as to the number of applicable items there may be or the length of time that it may take to put them into the

(Continued on page 152)

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55 West 44th Street, New York 36, N. Y.

out of school

(Continued from page 150)

educational mill. And it may be that the time lag between the survey and the practical moment for the application of the findings in the final report may raise some questions on the validity of the report. I certainly hope that this will not be the case, but speed is now of the essence. I hope the final report won't bog down in the Octagon or be held up by the A.I.A. Board of Directors.

●

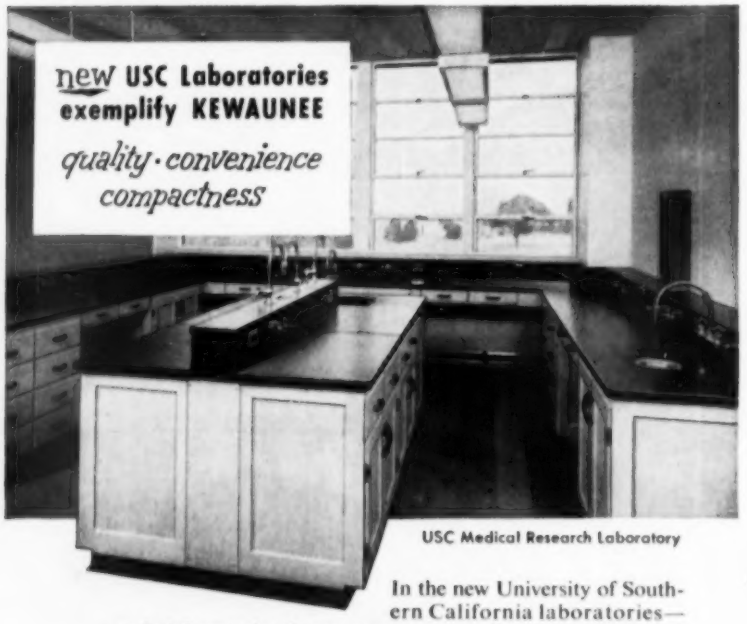
In the last month's column I mentioned that fantastic ratio that existed in June 1951—one student in architectural school for every 1.7 architectural practitioners. I do not know what the situation is today or what it will be by September this year. My guess is that the old figure may be two-tenths of one percent high, but don't check me on it.

The 1952 report of the National Architectural Accrediting Board, from which the above figures were cribbed, also made the following comparison. In 1950, the report states there was one medical student for every 8.6 medical practitioners. In architecture there was one school for every 340 architects and in medicine there was one school for every 2,800 doctors. This kind of comparison is a silly one. Comparable lifelong use of doctors by our citizenry as against their need for architects would be obviously a ridiculous analysis to make. Also medical schools are more expensive to build and to run than are architectural ones. The two professions are in no way alike. I just wanted to advise you that I place no significance on such figures, and again we must wait for the report of the Survey Commission (opus cited), with the hope that it will clarify the question of need for students and schools.

Of far greater importance is the stand taken by the Accrediting Board in this statement:

"The Accrediting Board is of course primarily concerned with quality. It has found, however, by hard experience, that at least a certain amount of quantity in respect to money, teachers, students, and physical facilities is necessary to establish and maintain quality. Experience shows that it takes at least six teachers to cover the architectural field regardless of how few the students. It takes eight teachers for 100 students, 12 for 200, and so on in a decreasing proportion. Obviously there will always be room for the exceptional school which can devote generous resources to a few advanced students. But in general, it would appear that one school of, say, 300 students could offer superior training facilities at lower

(Continued on page 155)



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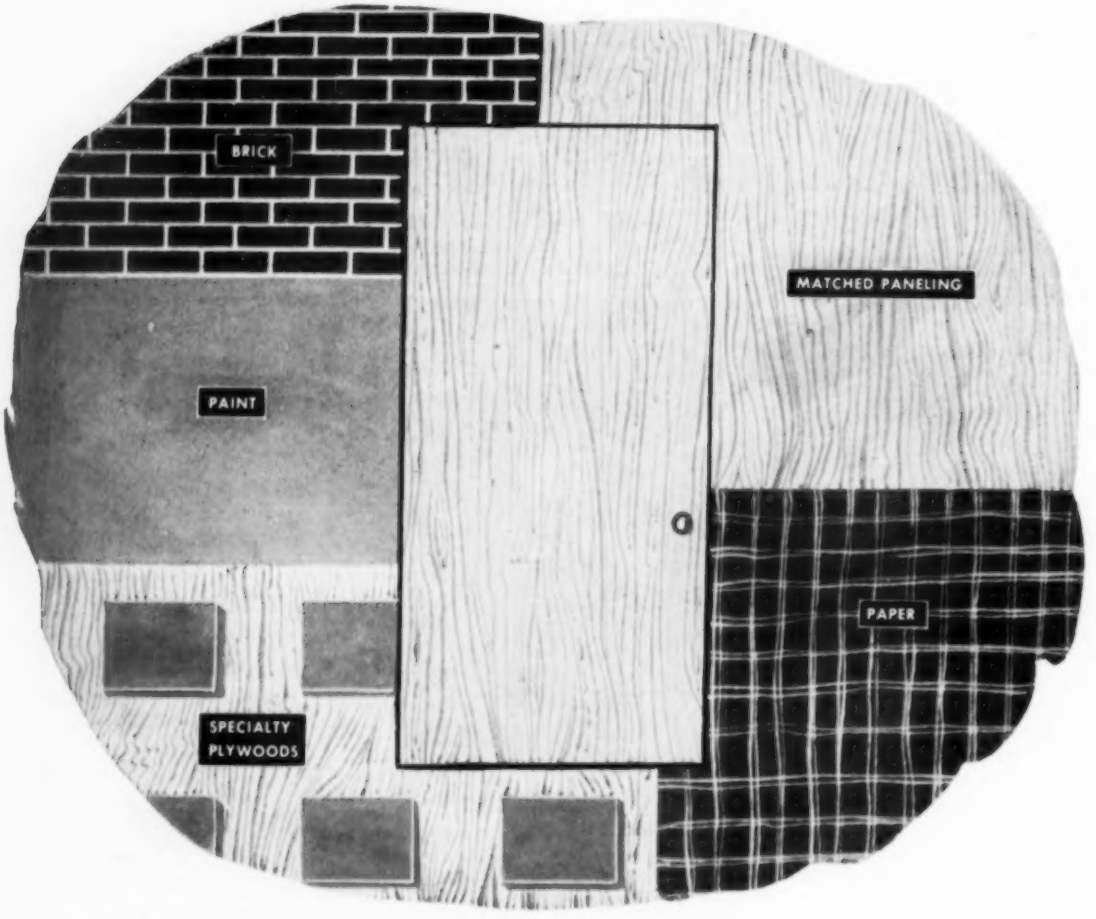

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(Continued from page 138)

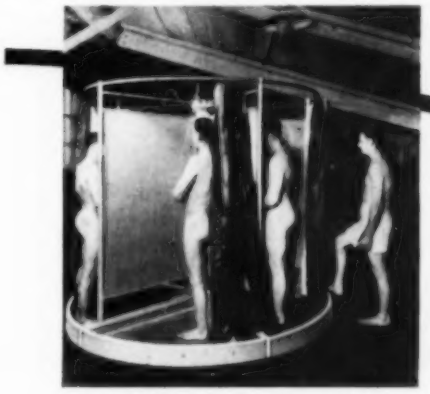
cost than could three separate schools of 100 students each."

While you and I may question these conclusions as they may apply to individual schools based on our ad hoc knowledge, I sincerely hope, repeating myself ad nauseam, that it will be possible for the N.A.A.B., other organizations, and the schools to fall back on the Survey Commission facts before doing anything drastic about their own programs this coming year. If the schoolmen can't wait, a little circumspect spying might be beneficial.

In several previous columns during the past three years I have discussed the slow disintegration of the influence of the Beaux Arts Institute of Design on American architectural education and the consequent groping on the part of the schools for substitute individual training programs. I have also cited a few cases where some success has been achieved in the development of individualized and orderly replacement of the former nearly universal B.A.I.D. system. Over a year ago a small group of educators attempted to develop a system whereby certain advantages in the old system might be reinstituted on an informal, voluntary basis. There was constituted a special committee called the Central Design Organization of the Association of Collegiate Schools of Architecture. It made four major proposals.* The first proposal was that the associated schools subscribe, through student purchase of four study texts a year, the amount of $50,000 per annum for the preparation of adequate, up-to-date study texts on major building types, which texts would serve as the basis for design program preparation. The second proposal, based on the first, was that assuming common use of the study texts, several schools might schedule the same type of design problems at approximately the same time. All programs and grading would be locally done and the only controls would be a mutually agreed sequence and scheduling. The third proposal, based on the second, was that after the individual schools had "completed their local judgments on their local problems based on a common study-text, each school would loan several of the more interesting solutions to a circulating exhibit." At the end of the school year all exhibits would be combined in one big show at the A.I.A. convention. Also suggested was a published report on the completion of each problem containing a representative selection of solutions. The fourth and final proposal was that there be a number of workshop conferences for teachers of design during which the above three proposals would be under continuing review.

(Continued on page 136)

* *From the eighth Journal of Architectural Education of the Association of Collegiate Schools of Architecture. Summer 1952*



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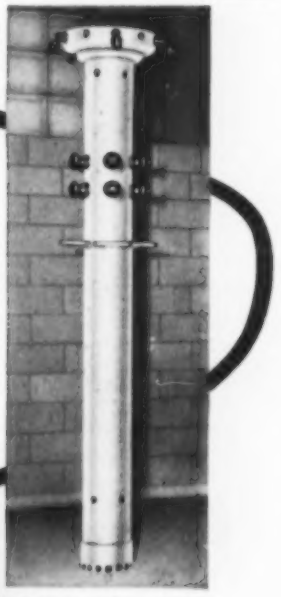

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out of school

(Continued from page 155)

This whole idea had been proposed at the A.C.S.A.-A.I.A. Chicago Convention in 1951, based on the felt need on the part of several educators that the B.A.I.D. had furnished at least a means of intercommunication between schools and some common ground in training systems. As presented at the 1952 convention of the A.C.S.A. (which always meets two days prior to the A.I.A.), the proposals of the Central Design Organization were summarily tabled by the conferees on what, to me as an interested spectator, were more emotional than scholarly reasons. The fact is that the majority of the schools are enjoying their relatively recently found independence of the old system and are afraid of being herded together again. The Central Design Organization was doomed from the beginning by its name, if nothing else. Actually there is a very regrettable tendency towards isolation on the part of many schools, and lack of a method of crosschecking and comparing curricula and teaching systems is proving a very real detriment to sound architectural education at the moment. Several schools had indicated an interest in experimenting with the Central Design Organization's proposals and I hope that the tabling of the Organization's report will not discourage some further exploration of its ideas by those interested parties. Something worthwhile might develop, even if not exactly along the line of the proposals.

Several of the schools have relied very heavily on "Mr. Big Name" in recent years. As a result, the star performers have often shaped the training programs to fit their individual predilections and convictions. There have been curious results. In two cases so complete a relaince on the maestro has occurred that the school might as well be back in the old atelier system of the B.A.I.D. The design may be different, but as design education the controls, the rota, and the lack of coordination with other parts of the training system all hark back to the days when reliance on the "patron" was required and obedience to his concepts was given—or else. Several schools have been able to avoid the big-name in design training and have placed the big-name at the head of the organization instead. On the whole this seems to be working fairly well, except in those cases where the big-name is spending too much of his time in private practice. The administration of an architecural school these days requires concentration and a devotion to duty and to education which must take first place in the mind and activities of

(Continued on page 158)

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out of school

(Continued from page 154)

the dean, director, chairman, or whatever he is called. Several men in this position could well take warning from the experience of one school which dropped to a very low status among the collegiate schools because the head thought he could ride two horses at once and it took him several years to discover that he couldn't. The school is recovering but it was a close shave.

•

The internal struggles in several schools have received unfortunate, widespread notoriety. Personality problems are always hard to handle, but combined with diametrically opposing philosophies, they can create formidable disunion. During this current search for objectives and method each school, launched on its own way, floats rudderless in its own stream unless experienced captains and a loyal and zealous crew man the appropriate posts. It is going to be some time before all the schools achieve the serenity of a special few. I would like to be able to name those few. These have pretty well decided what they want to be and maintain their calm and self-respect, and at least in two cases, their leadership, by the very fact that they have weathered the conversion period. Even though there may be an occasional change of personnel — even of deans — they retain both their poise and their procedures.

Graduate education is suffering from indecision at the moment. In several schools graduate training is not much more than one year of a super undergraduate thesis. Inspirational training vies with job training and it is often very difficult to identify a program that is designed to supply specifically the deficiencies of undergraduate training and at the same time to provide those elements of maturity and scholarship which belong at the graduate level. Schoolmen in architecture have been thinking very loosely on this subject, although certain fields of specialization at the graduate level have been supplying much needed training at the last moment of a man's school career.

Graduate programs in city and regional planning are now replacing in most instances the older and practically vanished curricula in landscape architecture. Only a few schools today retain their graduate landscape schools, but the planning curricula are growing rapidly to meet both student and employment demand as this new career is clarified. But graduate training in planning is already beginning to classify itself, even as undergraduate and graduate architectural schools. There are at least four or five

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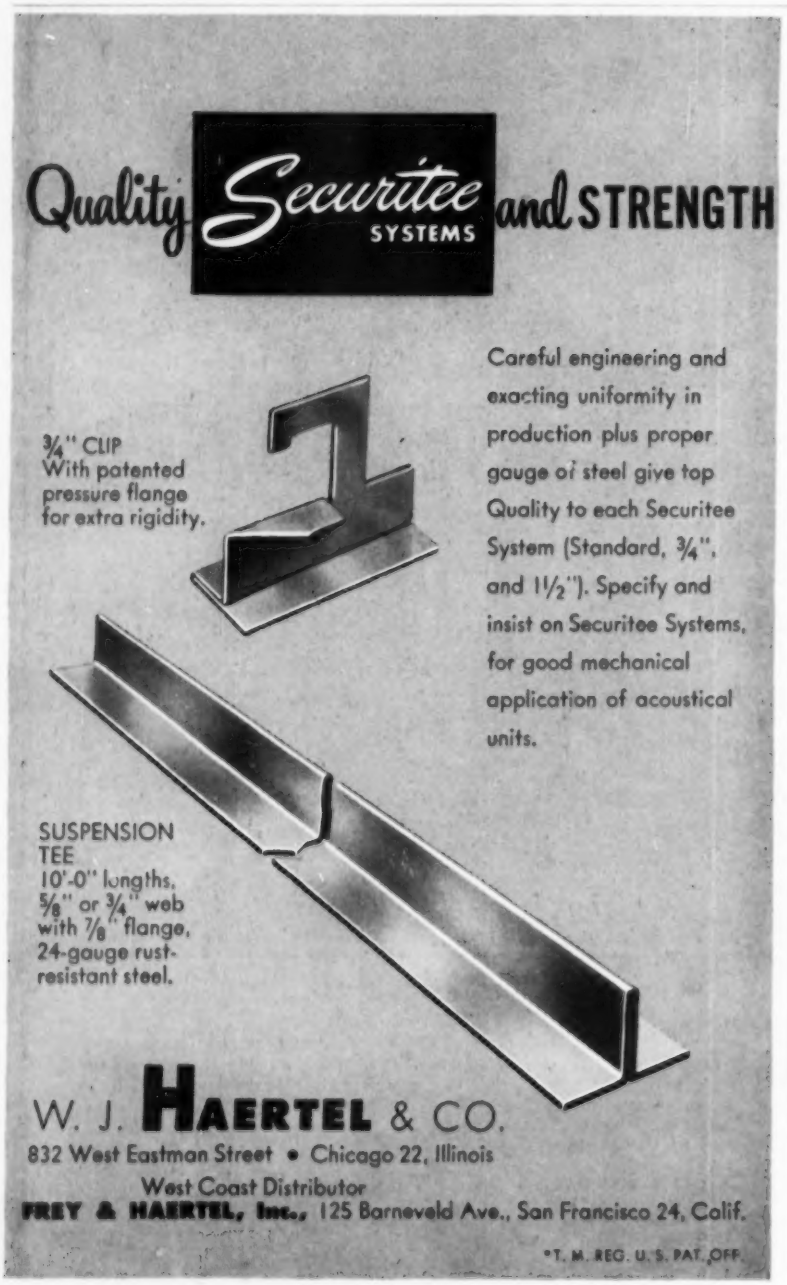
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out of school

(Continued from page 158)

distinct methods of approach which I hope to report on here after Professor Frederick J. Adams has completed his survey and report on city planning education for the Bettman Foundation. It should be ready this year.

One of curious aspects of the present search for a system on the part of the architectural schools is what I can only call a retreat to the visual arts approach. There are at least four and perhaps six that could be identified as being domiated by esthetics and visual arts training. They can be distinguished as at the completely opposite scale of philosophy from those architectural schools dominated by an engineering faculty and approach. Somewhere in between there is a middle ground which most programs are seeking in an effort to avoid either a faddish approach or a biased one. My own opinion is that our lack of communication between the schools leads to isolated approaches and isolated solutions—even in some of our most-crowded cities.

I understand that the regional meetings of the Association of Collegiate Schools of Architecture are gaining in quality and effectiveness. Although I have never seen the reports, not being a schoolman, I understand that some of these meetings are being recorded and reports distributed. This should prove helpful as a forum, but I still think that the A.I.A. itself should be a more fruitful center than it is or can be at the moment. Whether or not those schools now experimenting in the extremes would ever let down their noses at an A.C.S.A. meeting is doubtful, and if they did, the audience might not always be sympathetic.

What worries me, and what should worry anyone who has labored this far in this column, is the fact that the schools during their struggle to find a method are occasionally wandering off into worlds all their own. They may be nice little worlds—even better worlds than we live in now; but when all is done and the spawning season occurs—out of the Gothic and Classic breeding pools come the fingerlings. Are they fish or coelocanth? Or are they something else yet to be born? My guess is, nobody knows.

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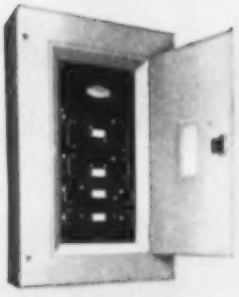

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american architectural theory at mid-century

By Turpin C. Bannister

The long-awaited publication by the Columbia University Press of *Forms and Functions of Twentieth-Century Architecture*, edited by Talbot Hamlin, constituted an architectural event of the first order in 1952. This was true for many reasons. In sheer mass its four volumes, weighing almost 22 pounds, and containing 3446 pages and 3745 illustrations, are monumental. The number and competence of its contributors is impressive. The quality of its printing is high. And its sale price of $75 cannot fail to provoke respect. In addition to its physical magnitude, however, its subject matter lies in an area so long quiescent, that it demands the most serious attention of all members of the profession.

The driving force behind this vast undertaking was a compelling belief in the need to bring together the facts and principles underlying contemporary architecture and to present them in an orderly manner. The timeliness of this task at the midpoint of the century is obvious. Our generation has denied the validity of electicism but, despite a spate of dogmatic pronouncements, few if any attempts have been made to organize our thinking into a reasonable and lucid theory. Indeed, with the collapse of former beliefs, we have tended to reject theory itself as a dangerous waste of time leading to impractical excesses. As a result, practice has become pragmatic and empiric. For want of any commonly accepted terminology, attempts to discuss principles and theory enmesh frustrated participants in endless semantic jungles. *Forms and Functions* thus becomes a timely stimulant and aid in clearing the atmosphere and pointing a fruitful direction for our thought.

Such an endeavor implies that architecture and the design process are susceptible to rational thinking. To judge from much current writing about architecture, this is not universally accepted, for many such works are basically doctrinaire, intuitive, and mystical. These may be salutary purgatives for their respective authors, or generally interesting as revelations of their personalities, or useful as stimuli to provoke the exasperated reader to formulate his own synthesis, but they have rarely presented objective statements upon which further systematic studies can be built.

To believe in the efficacy of a rational approach to architecture does not necessarily mean insistence on some rigid or mechanistic system. Any comprehensive and valid analysis must deal not only with demonstrable facts, principles, and their inter-relationships, but also with the intuitive creative act by which they are applied to a specific problem. The rationalist simply believes that the more complete is the creator's command of es-

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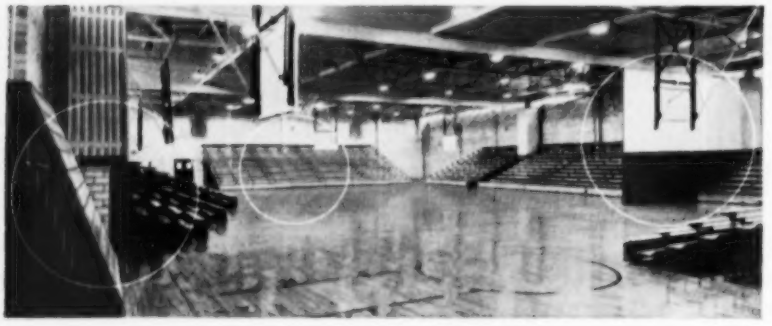

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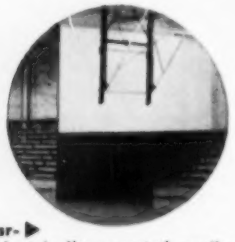

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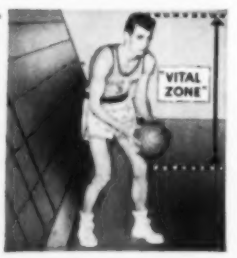

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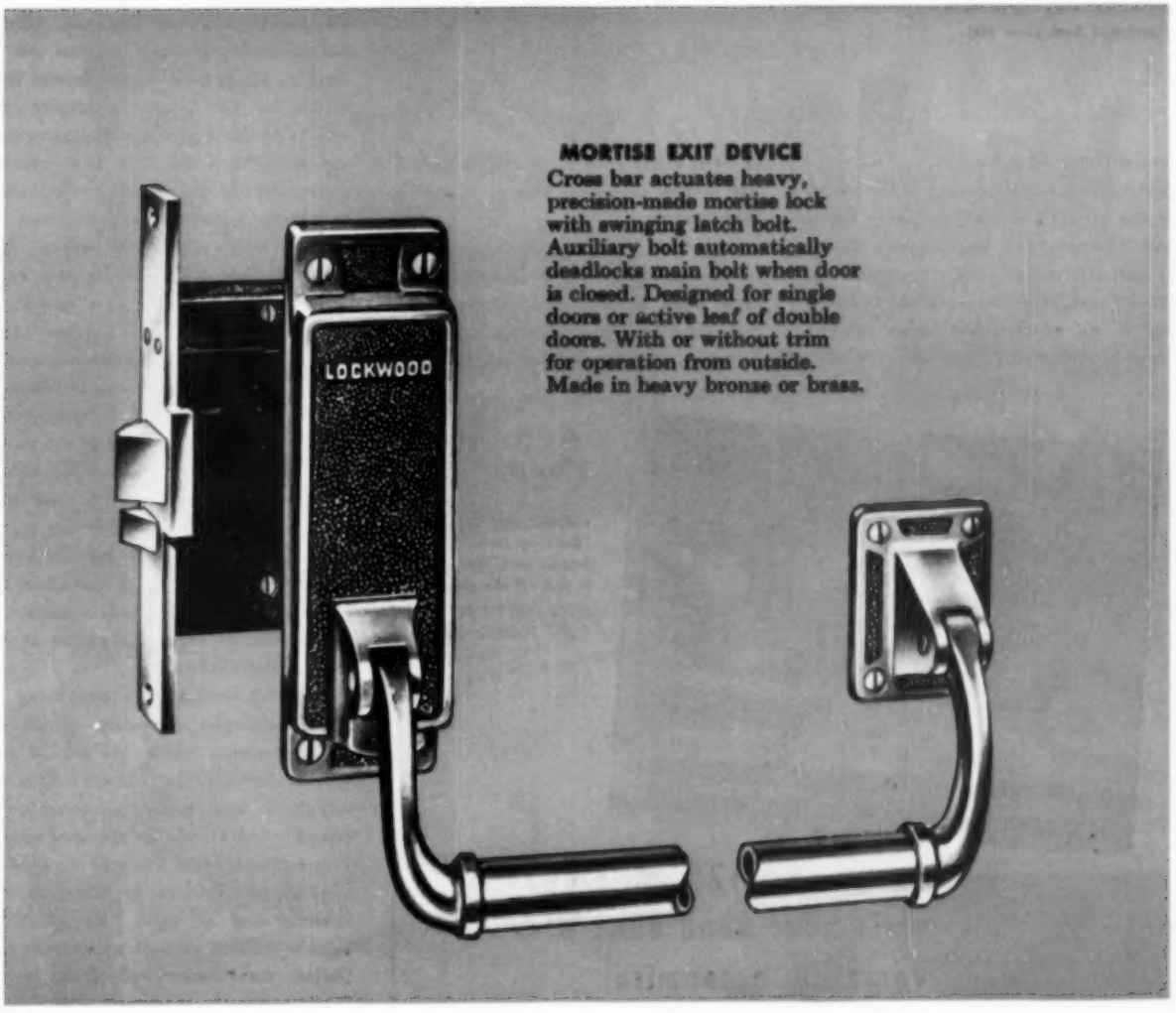

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(Continued from page 163)

sential facts and principles, and the more profound his understanding of the nature of the creative process, the more direct and felicitous can be his performance of the act. In the art and science of architecture, therefore, intellect and feeling do not conflict, but rather complement and reinforce each other. Consequently, to even the most practical architect, sound, consistent theory must be a vital concern.

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In his Introduction to *Forms and Functions*, Dean Leopold Arnaud reminds us that, since the Renaissance discovery of Vitruvius, architects have taken perennial interest in theory. In Italy, Alberti, Serlio, Palladio, and Scamozzi set an ideal of comprehensiveness beyond their means, but they served to inspire later writers of the Age of the Enlightenment and the 19th Century to a progressive realization of this goal. It is worthwhile to add to those mentioned by Dean Arnaud, a number of later works. The *Cours d'Architecture* of Jacques François Blondel, completed by Pierre Patte, formed an amazingly complete cross-section of architectural knowledge, as of 1777. The three volumes on architecture written by Quatremère de Quincy and published in 1802, as part of the monumental *Encyclopédie Méthodique*, belong in the same series. In 1805 (not 1809 as stated), Durand's *Précis des leçons d'architecture* (which is not "le Grand Durand," the *Recueil et parallèle des édifices* of 1800, as stated) summarized current theory for his students at the Ecole Polytechnique.

The 19th Century saw continuing efforts to compile up-to-date comprehensive statements which could take into account the impact of new construction techniques and increasing knowledge of historic styles. Rondelet's magnificent *Traité théorique et pratique de l'art de bâtir* first appeared in 1803, in five volumes and an atlas. By 1832, six French editions as well as German and Italian translations had been issued. While primarily concerned with matters of construction, its broad scope and comprehensive treatment could not but affect greatly the formulation of current theory. In 1833, J. C. Loudon presented a remarkable treasure trove of current fact and theory in his massive tome, the broad scope of which was belied by the title, *Encyclopaedia of Cottage, Farm, and Villa Architecture*. Louis-Pierre Baltard, first professor of theory at l'Ecole des Beaux-Arts, published in 1839 an *Introduction au cours de théorie d'architecture*. In 1847, his successor, Blouet, edited and supplemented a new edition of Rondelet, which continued to be issued until 1868. Laseur followed Blouet at l'Ecole, and published a *Histoire et théorie d'architecture*. Joseph Gwilt's *Encyclopaedia of Architecture*, published in 1842 and strongly influenced by Rondelet, had its final edition in 1903.

(Continued on page 166)

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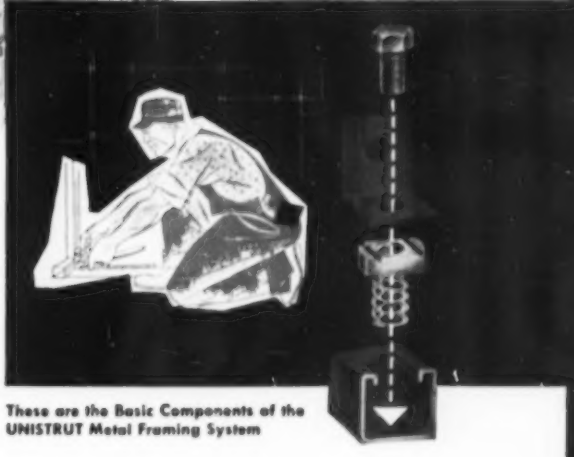

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(Continued from page 144)

The second half of the 19th Century saw many ambitious contributions to the literature of architectural theory. Reynaud's *Traité d'architecture* appeared in 1850, with a fourth edition appearing in 1894. The great *Dictionary of Architecture*, in nine volumes, written by members of the Architectural Publication Society of London, was issued, volume by volume, from 1853 to 1892. In pertinent special articles, an amazingly complete statement of current architectural theory can be gleaned.

Viollet-le-Duc's *Entretiens sur l'architecture*, 1863-1872, formed a persuasive and influential exposition of constructivist theory. In 1863-1868, Mothes published his three-volume *Illustriertes Bau-Lexikon*, as a revision and enlargement of his *Allgemeine deutsche Bau-Worterbuch*, first issued in 1858. The twelve-volume *Encyclopédie de l'architecture et de la construction*, edited by Planat and published in 1888-1893, illustrated the increasing difficulty of encompassing the whole of professional knowledge within one publication. The ultimate in comprehensiveness was the colossal *Handbuch der Architektur*, 1881-1906, edited by Durm, Ende, Schmitt, and Wagner, and forming in truth a whole library of 51 volumes covering every aspect of architectural knowledge.

During the first half of the 20th Century, four works should be noted. Sturgis' *Dictionary of Architecture and Building*, 1901, in three volumes, was the first to be attempted in the United States. Perhaps the most famous of all was the four-volume *Eléments et théorie de l'architecture*, published in 1902 by Julien Guadet, professor of theory at l'Ecole des Beaux-Arts during the period of its highest prestige. In 1926 appeared the first and only volume of four projected entitled, *Theory and Elements of Architecture*, by Atkinson and Bagenal. Finally, the four-volume *Wasmuth's Lexikon der Baukunst*, based on Mothes, but entirely revised and brought up-to-date, appeared in 1929-1932, with a fifth supplementary volume added in 1936.

It is significant that of these authors, all but two—Quatrèmere de Quincy, an art critic, and Loudon, a landscape gardener and journalist—were experienced architects. At least eight were also active in teaching and no doubt this served as a strong motive to produce texts which would facilitate their instructional duties. Nevertheless, these laborious and usually unremunerative volumes were primarily provoked by strong faith in the power of reason to wrest from chaotic everyday experience a network of pertinent facts and valid principles from which could rise a lucid and consistent approach to heterogenous professional problems.

The increasingly formidable effort required to cope comprehensively with an expanding body of architectural knowl-

(Continued on page 168)

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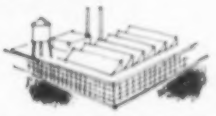

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(Continued from page 166)

edge prompted many architects to restrict themselves to only a part of the subject. The 19th Century, with its many new materials and structural systems, produced quantities of construction books. The demand for new, specialized building types provoked a considerable number of texts devoted to functional planning. On the other hand, esthetic writing, except in Germany, was less perspicacious since it was subjected to literary, moral, and historical, rather than strictly professional, criteria. This growing reliance upon specialized books was paralleled in another medium, the professional periodicals, which increased the rate of disseminating new ideas, but rarely attempted synthesizing them into an organized pattern. The emerging cult of pragmatism brought the validity of earlier theories into question, without offering a suitable substitute. Thus despite the continued publication of books and articles on theory, there grew up a general suspicion on the part of practitioners that theory was a useless academic amusement. Hence arose the paradox that in the midst of the greatest expansion of personnel, invention, knowledge, and intercommunication in the history of the profession, theory has come to be suspect and neglected in spite of a certain amount of subconscious agreement on fundamentals. *Forms and Functions* should prove to be both an active agent and a catalyzer in correcting this disturbing condition. If this occurs, and if it stimulates renewed concentration upon the evolving of a fresh, homogeneous, and comprehensive statement of the art and science of architecture for the second half of the century, it will indeed be a memorable landmark.

•

With the point of view engendered by this background and these potentialities, it should be possible to make a tentative, but fairly valid assessment of the content, quality, and probable value of *Forms and Functions*. It is obvious that, just as the scope and mass of the work demanded not one author but a whole co-operating bevy of contributors, no one reviewer can possibly presume the degree of omniscience sufficient for its complete and final evaluation. Such an assignment would require many co-operating reviewers and an unusually generous allotment of space.

The plan of *Forms and Functions* is well conceived. Volumes One and Two comprise a unit, written almost entirely by the editor, and devoted to general, yet thorough analyses of building elements as related to use, structure, and appearance. After a brief introduction, chapters are grouped as follows:

Use elements.

Public rooms; private rooms; service areas; horizontal circulations; vertical circulations.

Mechanical equipment.

(Continued on page 170)

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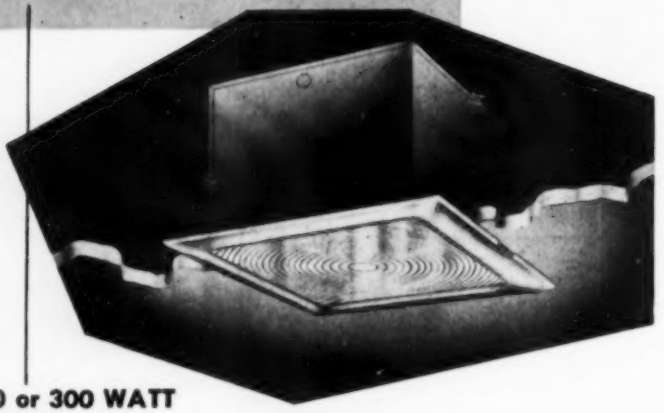

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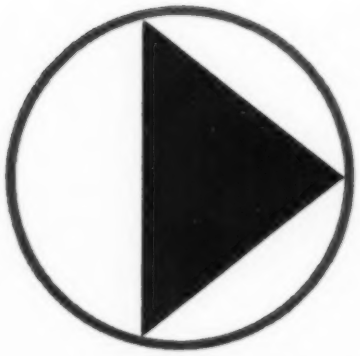

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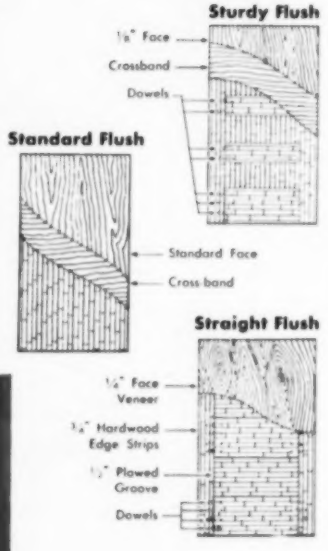

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reviews

(Continued from page 168)

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The site in relation to building.
Gardens and buildings.
Elements of the modern interior.
Ornament.
Architectural esthetics.
Unity; balance; proportion; scale; rhythm; sequences in planning; formal and informal sequence design; character; style; color.
Architectural design and structural methods.
Types; block or gravity construction; mass construction; framed construction; framed construction in steel and reinforced concrete; architectural design and building materials.
The building and the community.
The process of architectural planning.
Group planning.
General considerations; formal and informal groups; open and closed groups.

Professor Hamlin brings a unique preparation to this tremendous undertaking. Long experience as an architect has given him a thorough grasp of practical problems in the field, which establishes an excellent tone of reasonableness and common sense throughout the work. As one of the outstanding historians of architecture of our time, he is able to draw felicitous examples from all periods, including the present, to illustrate his analyses point by point. As a leading scholar and critic in the theory of architecture, his understanding of intricate relationships and his fairness of judgment are admirable. In addition to these virtues, he is master of a clear, direct, and eminently readable style.

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The underlying spirit of Hamlin's approach to the theory of architecture has two inter-related facets. One is his constant insistence upon the total psycholog-

(Continued on page 172)

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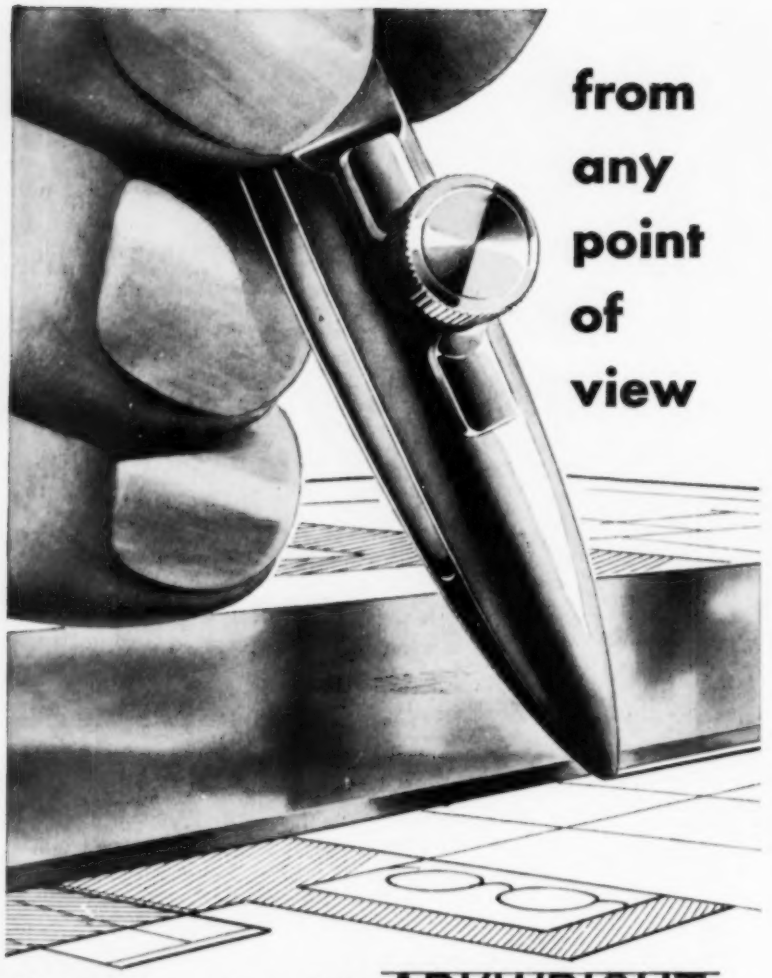

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reviews

(Continued from page 170)

ical effect upon the observer, thus synthesizing all aspects of the building. He often reiterates the danger of a narrow and mechanical analysis which tends to segregate use, structure, and appearance in separate and distinct categories. This point of view conforms to the principles of Gestalt psychology. Secondly, he emphasizes as the desired goal of architectural design a comprehensive and integrated "expressiveness," which ensures that the total psychological reaction of the observer will be appropriate to and harmonious with the whole building. This desideratum parallels the taste for realism and appreciation for the dignity of the individual. Although elements of these criteria go back a long way into the past, the first two volumes of *Forms and Functions* present this point of view more fully and more eloquently than any previous work, and consequently they attain a unique place in architectural literature.

In connection with use requirements, where too often a mechanistic spirit dominates, Hamlin stresses the indispensability of psychological values in attaining true and complete utility. "If . . . buildings are primarily for human activity, it is a matter of the utmost importance that the architect understand the nature and requirements of the activities for which a building is designed. Furthermore, he must know enough about the entire make-up of human beings to appreciate the psychological processes which will accompany those activities; for human beings are more than neuromuscular machines of extraordinary complexity, with definite limitations and definite possibilities — they are human consciousnesses in which every activity sets in motion an elaborate system of reactions of pleasure or pain, of memory, of imagination . . . Any true functionalism in architecture must be based on service to the entire man . . ." And further, "directness and clarity of functional expression . . . (are) most important of all, for nothing is more destructive of the entire sense of true char-

(Continued on page 174)

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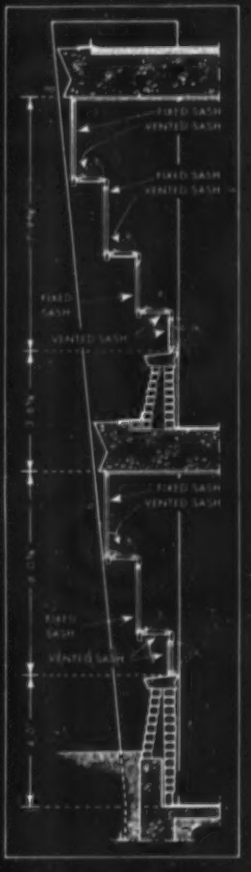

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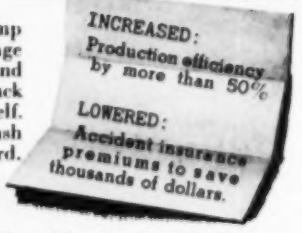

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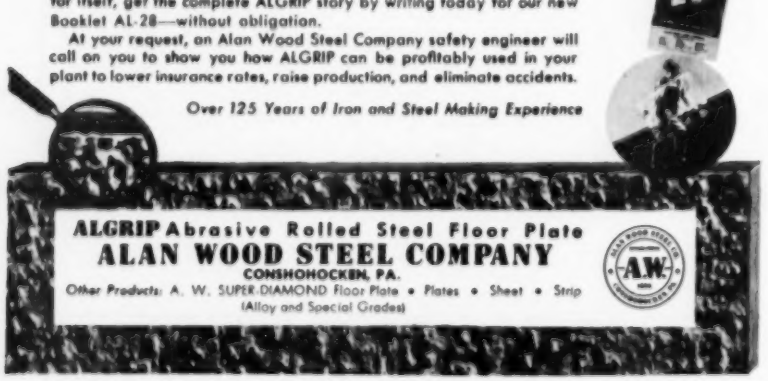

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reviews

(Continued from page 172)

acter in buildings than an attempt to make a building express uses or emotions that are foreign to its true nature."

The psychological effects of structural systems, materials, and details are likewise emphasized, as, for example, in the statement ". . . in the expression of structural function and structural stress there resides one of the great sources of the beauty which architecture can contribute to the world . . . We are seeking an architecture in which imagination and creative power transmute the strictly necessary into the most powerfully expressive without the aid of extraneous detail or ornament . . ."

The esthetic aim of the architect is also presented as a striving for an expression consonant with function and structure. "Functional clarity," "emotional rightness," and "appropriate character" are recurring terms. By these qualities, the architect "expresses and, to some degree at least, determines the emotional life of the world."

Finally, "style," in the sense of a coherent and efficacious conception of the total building, climaxes this philosophy of "expressiveness." "What style in the use of materials implies is a search for the most expressive treatment possible." "The requirements it (climate) has dictated have become, not limitations to design, but rather sources of expressive style."

To the extent that contemporary architects worry about philosophical notions, the widespread, though often subconscious, acceptance of "expressivism" is a remarkable phenomenon. Edgar Kaufmann, Jr., Director of the Department of Industrial Design of the Museum of Modern Art, has remarked: "Every building makes demands: these are usually classified as structural, functional, and esthetic. (These three classifications, of course, are not so separate in practice as in words.) I suppose modern architects have been unique in believing that these three demands are equally important, and that the best architecture is that which satisfies them equally; that the ideal architecture meets them not by different elements as-

(Continued on page 178)

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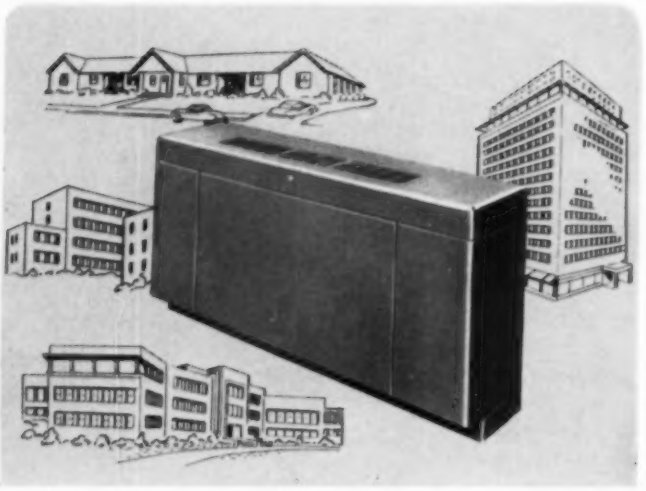

● The Remotaire is an individual-room, remote type unit which provides all-weather comfort conditioning for central plant multi-room installations such as hotels, motels, apartments, hospitals, residences and office buildings. It heats in winter, cools and dehumidifies in summer . . . filters and circulates the air in all seasons.

As part of a Remotaire system, the individually-controlled Remotaire unit allows each occupant to choose the room temperature that suits him best without affecting adjoining rooms.

The Remotaire uses chilled water from a central water chiller for cooling and hot water from a central heating plant for heating. It is provided with an arrangement for introducing ventilation air through a wall aperture behind each unit, thus eliminating use of expensive, space-consuming ductwork. However, if desired, ventilation air may be supplied by several other methods.

Its adaptability to a variety of ventilation systems makes the Remotaire ideal for modernization as well as new construction. For further details, write for our free Remotaire Brochure, Form 298.

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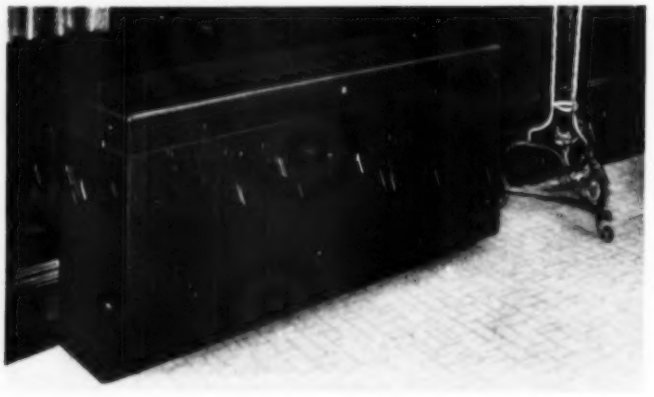
DESIGNED FOR LOCATION UNDER WINDOWS, the Remotaire can be free standing or recessed into wall 4 inches. It is enclosed in an attractive cabinet of sturdy, reinforced steel—plus a reinforced air grille—which adds to permanence and long lasting beauty of unit. Installation pictured above is part of a Remotaire Well Water System used at the Concord Hotel, Kiamesha Lake, N. Y. The modernization installation below—the C. F. Church Co., Holyoke, Mass.—is part of a Remotaire Wall Aperture System.



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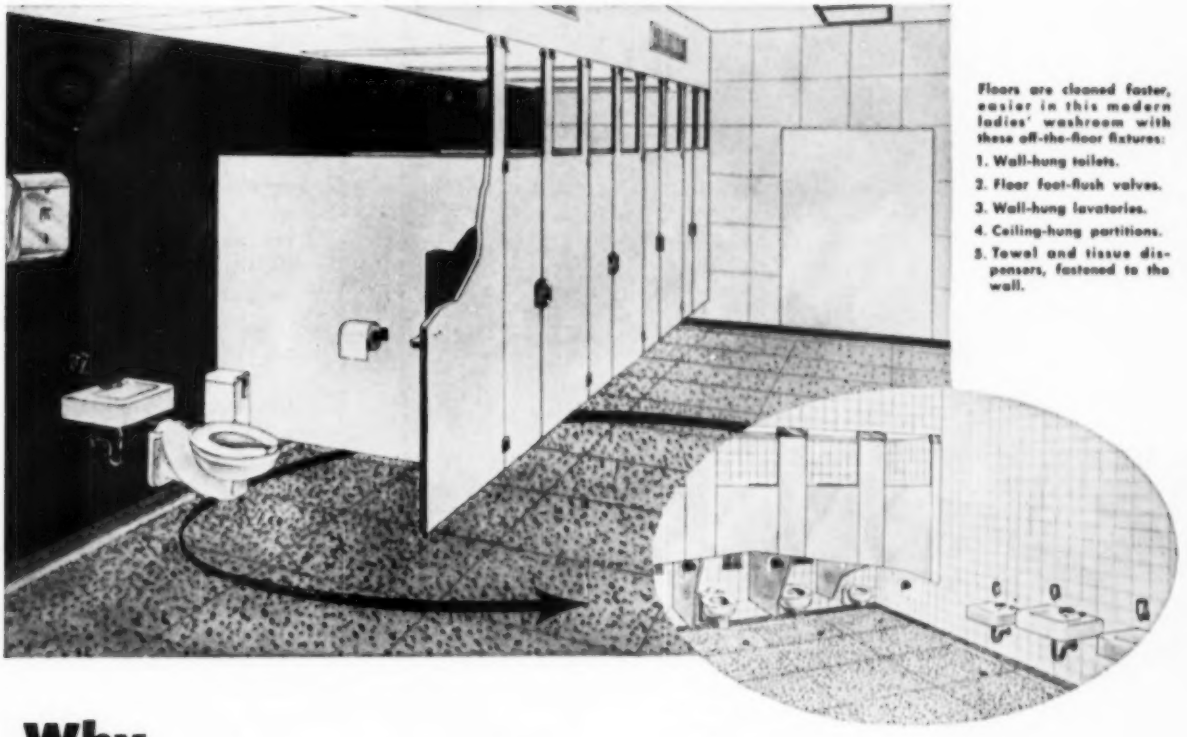

Floors are cleaned faster, easier in this modern ladies' washroom with these off-the-floor fixtures:

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2. **Floor foot-flush valves.**
3. **Wall-hung lavatories.**
4. **Ceiling-hung partitions.**
5. **Towel and tissue dispensers, fastened to the wall.**

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"Keep the fixtures off the floor!"—A sound recommendation from the plant washroom designer who wants his client to have the best in employee health, morale and efficiency . . . a minimum of absenteeism and wasted man-hours. For example—wall-hung lavatories and toilets with ceiling-hung partitions aid a faster, easier cleaning operation. They reduce illness and absenteeism, too, by doing away with filth-catching corners and crevices, permitting better ventilation.

Labor and administration costs generally eat up 85-95% of a typical operation's sanitation budget. Stretch this figure out over the life of a building—50 years or more—and you'll realize the full importance of passing every possible washroom labor saving on to your client in his new building.

Advice on off-the-floor fixtures is only one of many services offered by your Washroom Advisory Service man. Call him in. Get *all* the details—*based on actual experience.* He has the know-how gathered by a group of Scott-trained consultants who have serviced over 500,000 washrooms.

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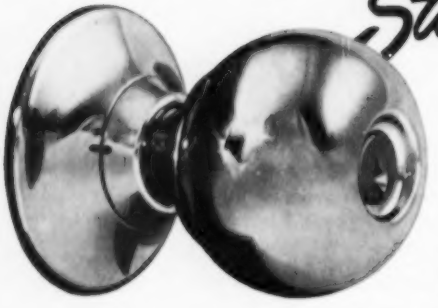

Smart styling, simple installation and trouble-free operation have led architects throughout the country to specify the Russwin "Stilemaker". This precision-made lock provides extra long life, utmost security. It is available in five designs and 26 functions. Send for detailed information. Russell & Erwin Division, The American Hardware Corporation New Britain, Connecticut.

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Door Pulls, Push Plates, etc.
Surface Door Closers
Fire Exit Bolts

reviews

(Continued from page 174)

sembled in a construction, but, so to speak, at one fell swoop. This image of the ideal architecture has hovered over the drawing boards of creative architects for at least 60 years, if my reading the record is right. It has been called by many names: organic, integral, dynamic, etc. . . . another, which appeals to me . . . is, synergetic architecture . . . (which) means working together, co-operating . . . I propose that we accept as a reliable test of quality in modern architecture that the less separable the expression of function, structure, and beauty in a building, the more nearly it approaches the ideal of our epoch."

A natural reaction to this condition is to discover how and why this point of view has come to be accepted by this generation of architects. Is it immutably inherent in the nature of architecture, or is it another inscrutable dogma obscuring discovery of more fundamental truth? Did the designers of acknowledged architectural master works employ such a principle, consciously or unconsciously, or can we be certain that we do not restrict this accolade to those examples which conform to our own *a priori* criteria? The controversy between Viollet-le-Duc's constructivistic interpretation of the Gothic and Pol Abraham's insistence on the rib as primarily an esthetic device illustrates this dilemma perfectly. Indeed, strong argument could be advanced that no architect of yore ever consciously practiced expressive purism.

Forms and Functions accepts expressivism as its critical point of departure and does not attempt to investigate its philosophical validity or its historical evolution. Since, as Kaufmann has noted, the selection of a basic point of view is a matter of taste, or, perhaps more accurately, a matter of the architect's reaction to his own total experience, it is, in the light of its wide acceptance, a legitimate assumption upon which to base a theory of architecture for the mid-20th Century. No doubt there were good reasons for this assumption. Limited space was one, for even two volumes are all too brief, especially when copious pictorial material absorbs so

large a proportion of page areas. The question of audience was probably another. A third was perhaps the fact that our ideas of the scope, nature, and content of theory itself need refinement and revision.

Yet, despite the extraordinary wealth of cogent observations contained in *Forms and Functions*, one cannot but wish that some consideration of other types of theories might have been essayed. It would have greatly aided students and practitioners, to whom *Forms and Functions* is addressed, to weigh the merits of expressivism if its fundamental claims could have been contrasted by possible alternative points of view. An analysis of psychological attitudes toward style, of the factors leading to style change, and the bases upon which a dominant, homogeneous style depends would also be extremely helpful. These are crucial questions to which a profound reading of architectural history would contribute much. In a day when crude functionalism or constructivism is so vehemently preached but so rarely practiced, it could not help but be beneficial to survey both functional and antifunctional systems.

•

Volumes Three and Four comprise a second unit in which 49 chapters by 50 authors analyze specific problems posed by individual building types. Two final chapters deal with The Community as Architecture. The result is not only a useful series of essays, but a remarkable cross section of 20th Century architectural knowledge and practice as well.

The idea of this unit stems, of course, from the method used by Guadet in his *Elémentsetthéorie*. *Forms and Functions*, however, illustrates most dramatically the change of viewpoint brought by the passage of half a century. While most of the present contributors continue to sketch the historical evolution of their building types, much greater emphasis is placed on functional requirements and on sociological and economic factors. This greater scope unfortunately conflicts with limits of space, for, although the two volumes al-

(Continued on page 180)

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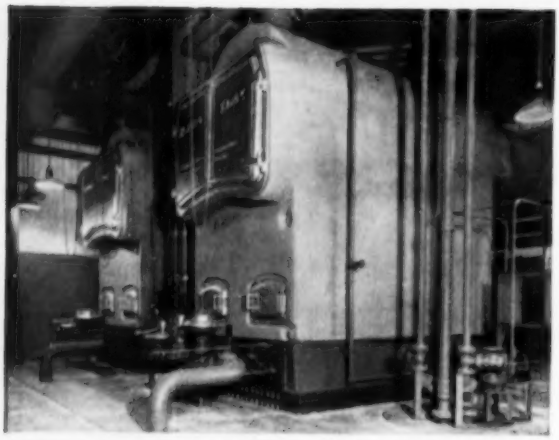

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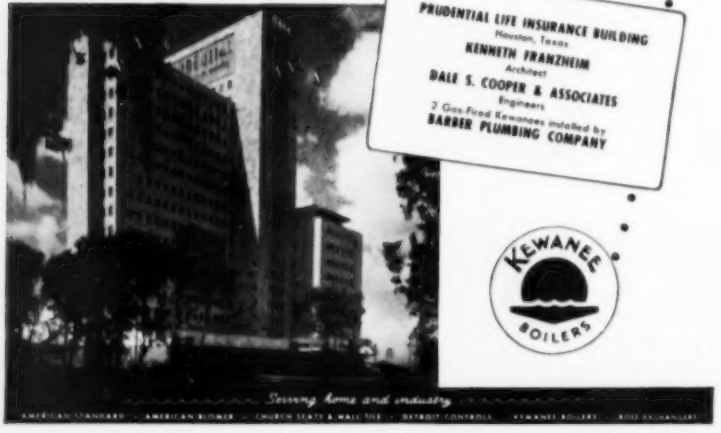

reviews

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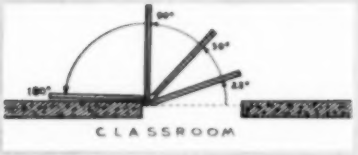
low 1773 pages, this means an average of only 35 pages per chapter, which is again reduced by the generous allotment of illustrations. Consequently, treatment is more descriptive and qualitative, than quantitative. Presumably, the chapter bibliographies are intended to offset this handicap, but these tend rather to reveal the paucity of worthwhile studies. For example, that on town and city halls lists 20 books, 16 of which are either secondary general histories or historical monographs.

In general, the quality of the essays is very high. It is hazardous to nominate the most successful, since each reviewer labors under special interests. Lawrence Perkins' chapter on day schools is excellent in scope, content, and insight. A. M. Githens compresses his vast knowledge of libraries with considerable success. Max Abramovitz contributes a beautifully organized and thoughtful chapter on synagogues. Walter Taylor deals ably with Protestant churches. John Root traces the development and design of the palace hotel with evident enjoyment. Henry Churchill does well by his specialty, mass shelter. Kenneth Welch presents an excellent study of department stores. Wallace Harrison reveals the economics of tall office buildings in an authoritative manner. Morris Ketchum on small shops, Pietro Belluschi on shopping centers, Charles Butler on hospitals, William Pereira on sanatoriums and asylums, Alfred Fellheimer on railroad stations, Albert Heino on air stations, Thomas Vint on park structures, and Lawrence Anderson on buildings for athletics, all render competent performances. A few contributors obviously found themselves with types difficult to exploit. Only a handful of chapters are definitely disappointing. That on Catholic churches yields little of value, since its concentrated plea for contemporary forms is quickly conceded by present-day architects. It remains to note the persuasive exposition of modern urban concepts eloquently stated by Lewis Mumford, and the role of the architect in city planning defined by Holmes Perkins.

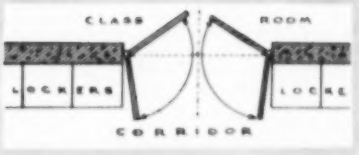
It is inevitable that essays on building types will become outmoded far more

(Continued on page 182)

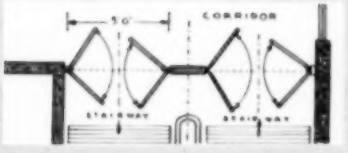
practical ideas for
SCHOOL DOOR control...



1 RIXSON UNI-CHECK with 4 points of hold-open. A 180° hold-open built into the Uni-check plus 3 additional hold-open points in the RIXSON No. 37 Holder . . . allows teacher to set door where desired. A slight push releases hold-open. The ideal classroom door control.



2 RIXSON DUO-CHECK operating Double Classroom Doors swinging both ways. With half the wall thickness and locker depth adding up to 23", these doors when open 90° will extend only 5" into the corridor. Small 2'4" doors on Duo-checks panic proof for small children.



3 RIXSON No. 30 Double Acting Closers operating doors leading into stair well. This arrangement allows a free traffic flow. Small 2'6" doors easy for small children to open.

4 RIXSON UNI-CHECK operating classroom door leading out of doors. Classroom floor is elevated two inches to prevent driving rain from entering. Uni-check is imbedded into lower level. This treatment is suitable only in warm non-freezing climates.

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reviews

(Continued from page 180)

rapidly than the preceding general sections, and this hazard might raise a question as to the feasibility of including them in the present work. It might be argued that such topics lie more properly in the province of periodicals which from time to time could bring them up-to-date. Nevertheless, it seems worthwhile to this reviewer to include them despite the fact that they cannot be definitive or permanent. For student-architects, they will long remain useful as preliminary introductions to appropriate problems in design. For mature architects, they can be of service as a broad base against which to check personal experience. Within their mandatory limits, it is futile to ask more.

One inevitable result of reading *Forms and Functions* is the underscoring of the desperate need for research on almost every phase of architecture and the necessity of codifying periodically the various areas of professional knowledge. One meets on almost every page statements of principles now obtainable only by induction, many of which, however, could be checked by controlled experiment. The failure of the architecture profession to participate in one of the most fruitful and characteristic techniques of modern civilization has kept most professional thinking and decisions at the level of unarguable, arbitrary opinion, and has contributed much to public indifference for architecture services. The cultivation of the research point of view may well transform both theory and practice in the next half century.

•

The physical form and composition of *Forms and Functions* is most satisfying. The quality of illustrations is excellent and the unusual effort to redraw material for the sake of clarity is especially commendable. The monumental indices with elaborate cross-references, covering 102 pages, prepared by Jessica Hamlin, greatly increase the usefulness of the work. All in all, in content and form, Columbia University, which generously financed its preparation, and the Columbia University Press, which produced it, both may take a legitimate and large measure of pride in the result. For his enlightened encouragement and staunch support at the inception of the project, and throughout its execution, Dean Arnaud has earned the gratitude of the profession and the schools.

But it is to the editor himself that architects everywhere should and will feel most indebted. *Forms and Functions* has assuredly been a labor of love. Its success and influence will rightfully link him to the proud company of architectural theoreticians who have channeled and synthesized professional thinking through the centuries.

Finally, since it is comforting for every reviewer to be able to raise an eyebrow in the midst of editorial perfection, it is disconcerting to report that close concentration has revealed only seven minor

(Continued on page 183)

Summerbell for SCHOOLS

Elementary School, Santa Paula, California.
Architect, R. S. Raymond.
Structural Engineer, R. J. Valentine.
General Contractors, Barringer & Botke.
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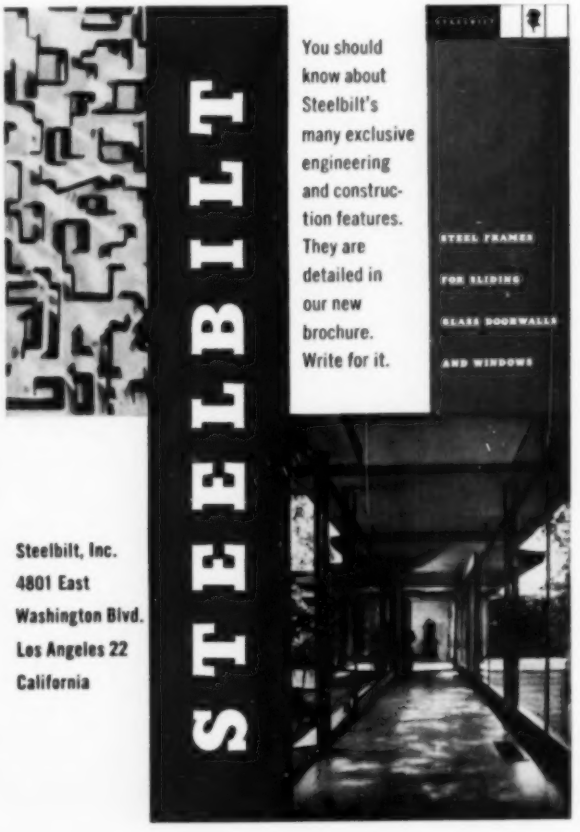
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reviews

(Continued from page 182)

blemishes. In Volume One, page 262, the Stockholm Town Hall is attributed to Ivar Tengboom. Even if it had been spelled Tengbom, Ragnar Ostberg would have only half objected, for he receives his rightful due on page 29 of Volume Two. On page 537, Volume One, the dome of the Roman Pantheon should be described as of concrete, not brick as stated, although brick was used for the permanent formwork of the lower parts. On page 547, Volume One, the piers of the Paris Pantheon failed *before* the dome was erected, not *after* as stated. The next three are hardly worth mentioning: on page 493, Volume One, the reference to Figure 505 probably should be to Figure 500; on page 368, Volume Two, the reference to Figure 453 should read 454; on page vii, Volume Two, the conjunction "and" should be inserted between "Steel" and "Reinforced Concrete." How meticulous can one get! The final item poses something of a puzzle. On page 384, Volume One, mention is made of a "Cremorne Bolt." This spelling is vouchsafed by Henry Saylor in his new *Dictionary of Architecture*. Stanley's hardware catalog, Cassell's French *Dictionary*, and Larousse, all spell it "Cremone." Larousse, moreover, confirms its derivation from Cremona. The *Britannica*, however, notes a Cremorne Gardens in 18th Century London. Disputes in architectural etymology being something of a rarity, this problem might in time, if properly encouraged, rival that of the mysterious "galloping rafter." In any event, such a slender list of errata in 3455 pages must comprise an all time editorial record.

The immediate usefulness of *Forms and Functions* in schools of architecture is obvious, but, since its price equals its very considerable weight, its use in schools promises to be confined to a reference for supplementary reading. In the interest of a generation of students who could profit immensely by owning it for more leisurely reading, many teachers will join this reviewer in urging the Columbia Press to investigate the possibility of issuing a less costly student edition with pulp paper between paper covers. One wonders whether students of Ecole would have perused Guadet so frequently if the French text had not been so readily available. So worthy a project might indeed be subsidized from professional and educational sources.

elements of interiors

The Book of Furniture and Decoration: Period and Modern. *Joseph Aronson. Crown Publishers, Inc., 419 Fourth Ave., New York, N. Y. 1952. 242 pp., illus. $4.00.*

This is a completely revised and augmented edition of a book that first appeared in 1936. It is quite understandable that during the past 16 years more than 100,000 copies have been sold, for because of its usefulness and comprehensive coverage it has become one of the established works in the field of home

(Continued on page 184)

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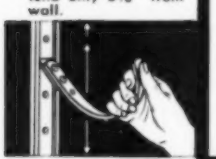
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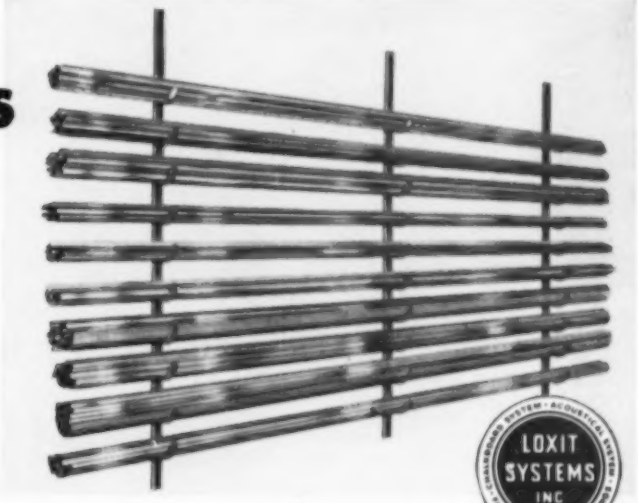

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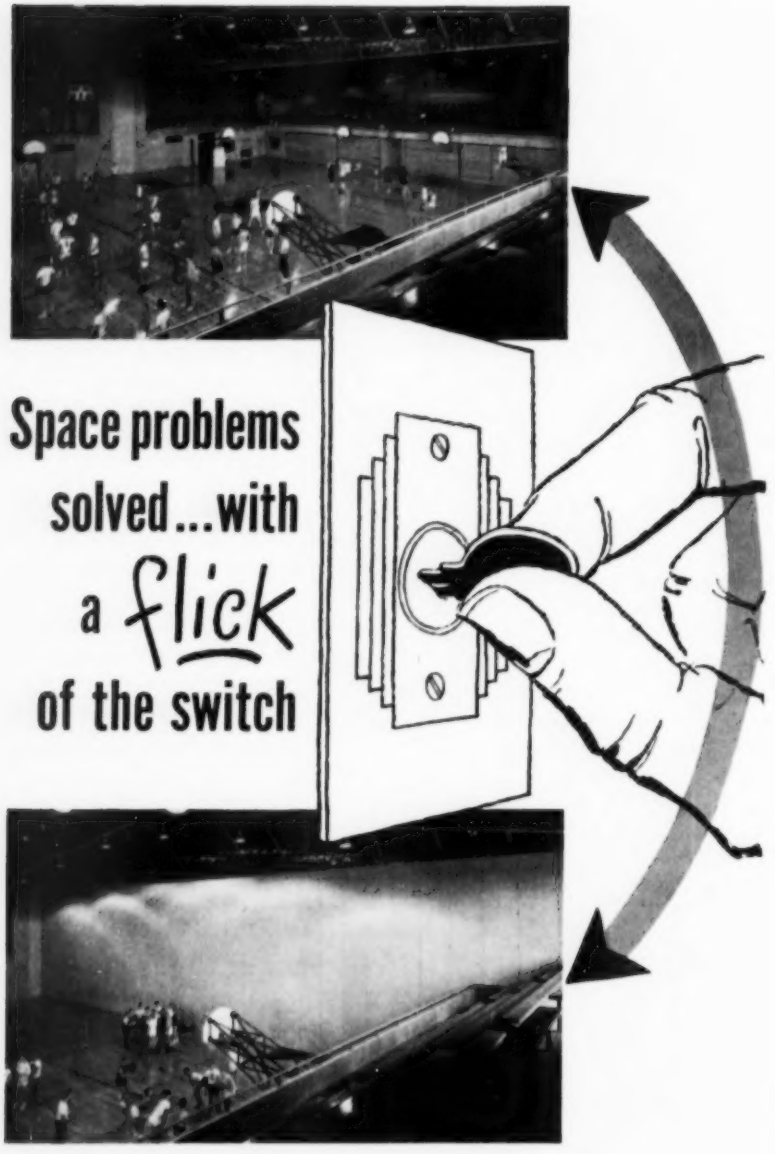

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reviews

(Continued from page 183)

decoration. Aronson, one of the leading interior architects and furniture designers of the day, has a far-reaching and sound knowledge of his subject, so that his approach has the ring of absolute authority.

The author states, and rightly so, that the design and the process of erecting an exterior should not be isolated from the decoration of the inside. Materials, ideas, and human abilities all contribute in producing the complete structure, and the same principles—possibly the same urges—upon which an exterior depends should govern the interior. With that viewpoint in mind, Aronson provides the reader with all he needs to know not only about period furniture and the work of the great decorators of the past, but about modern furniture and design as well. The first part of the book is devoted to the development of decoration from Italian Gothic days, when rooms began to take on a form slightly comparable to those of today, right through the centuries in Europe and in this country to contemporary design. True, some of the chapters, such as those on 18th Century French furniture and decoration may be lamentably brief, considering the vast scope of the subject, but the author has the talent of presenting the important information and facts in a concise and readable manner. The approach to furnishing is naturally influenced by precedent, so that these historical outlines of the many great periods of decoration are particularly beneficial.

In the section of the book dealing with the elements that go into decoration, one is impressed with the thoroughness with which the subject is treated. Here is much practical information on color, mixing paint, architectural lighting, textiles, woods, metals, decorative objects—in fact the gamut of all things that go into backgrounds. Of particular import to the decorator and interior architect are the sound ideas about walls and wall coverings, ceilings, floors and windows. Especial emphasis, in keeping with the times, is the handling of radios and T.V. ap-

(Continued on page 186)

BUILT

to withstand the centuries

The Holy Sepulchre Mausoleum, Oakland County, Michigan, is a superb and mighty combination of marble and bronze, with a beauty in every way appropriate to the solemn purpose of the building.

Noteworthy and complimentary is the large amount of ANACONDA Architectural Bronze used on the exterior and interior. Mr. Lawrence Michaels, President of The Michaels Art Bronze Company, Inc., Covington, Kentucky, reported that a total of 13,870 pounds was supplied.

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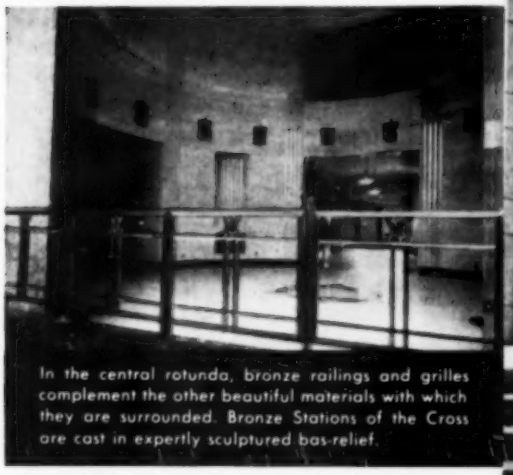

In the central rotunda, bronze railings and grilles complement the other beautiful materials with which they are surrounded. Bronze Stations of the Cross are cast in expertly sculptured bas-relief.

write The American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.

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California

reviews

(Continued from page 184)

paratus in room settings—a most important consideration in view of the unsightly appearance of most commercial sets.

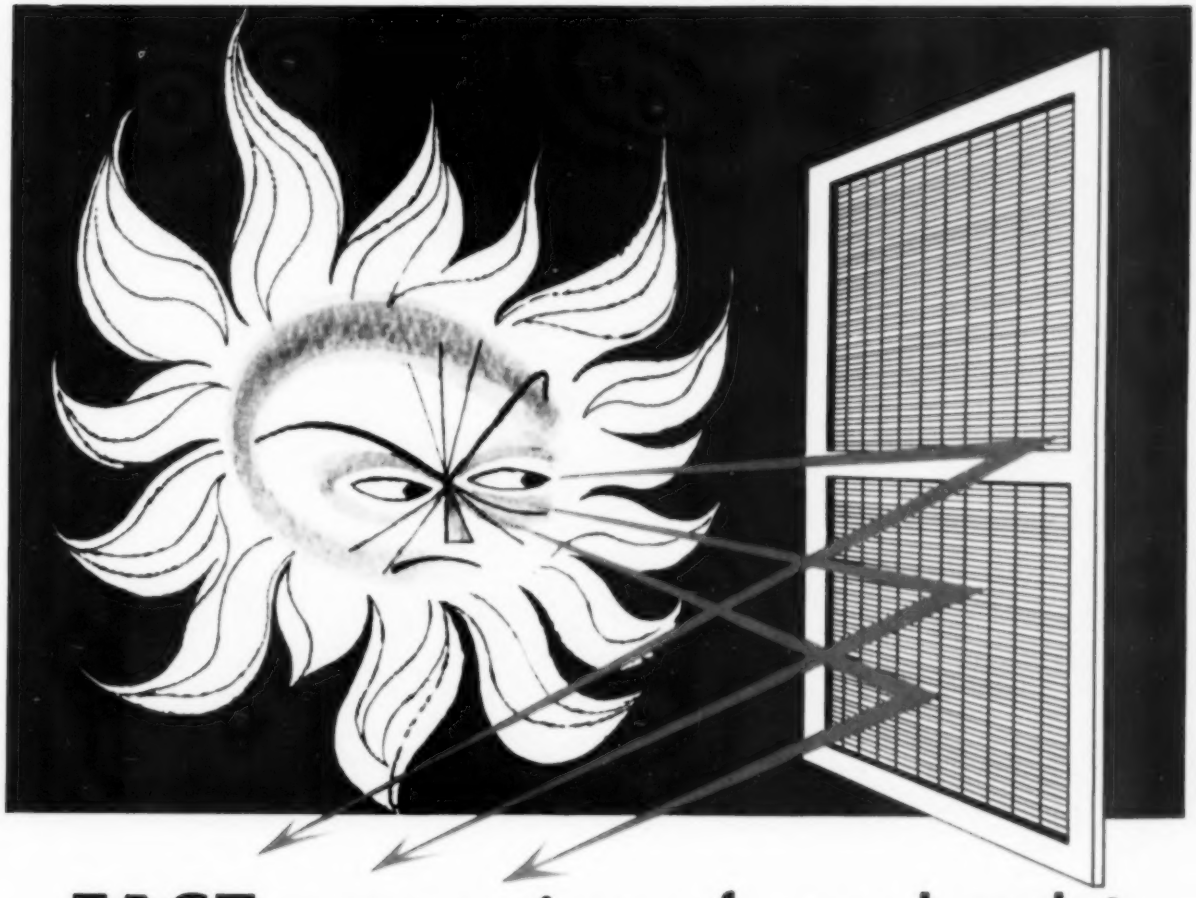
Although room planning depends to a large extent on one's creative ability as well as personal taste, Aronson sets forth many useful principles which are worth heeding as a basis upon which to work. He stresses the importance of the composition and plan of the room and from there goes on with suggestions on approaching the problem of decorating it, whether it is a living room, dining room, library or television room. He presents a practical method of analysis but does not attempt to give set formulas for decorating. Coupled with individual taste, his ideas are a good guide for expressing natural creative art in the home. A salient feature of the book, in this connection as well as providing inspiration, is the great number (more than two hundred) of photographs of fine interiors of all styles and line drawings that accompany the text. FRANK A. WRENSCH

guide for framers

A Proposed Housing Ordinance Regulating Supplied Facilities, Maintenance, and Occupancy of Dwellings and Dwelling Units. *Committee on the Hygiene of Housing. The American Public Health Association, 1790 Broadway, New York 19, N. Y. 24 pp., 50 cents*

Health departments wishing to adopt a local housing code for maintenance and improvement in the hygiene of existing dwellings, will find in this brief pamphlet a useful guide in the presentation of a proposed housing ordinance. Minimum standards believed essential to the protection of public health, for dwelling facilities, maintenance, and occupancy are incorporated in the ordinance. The need for local legal counsel in the formulation of a local housing code is stressed and suggested methods are discussed for local adaptation of the standards and for administrative co-operation with building officials concerned with structural safety and fire hazards of dwellings. Sections

(Continued on page 188)



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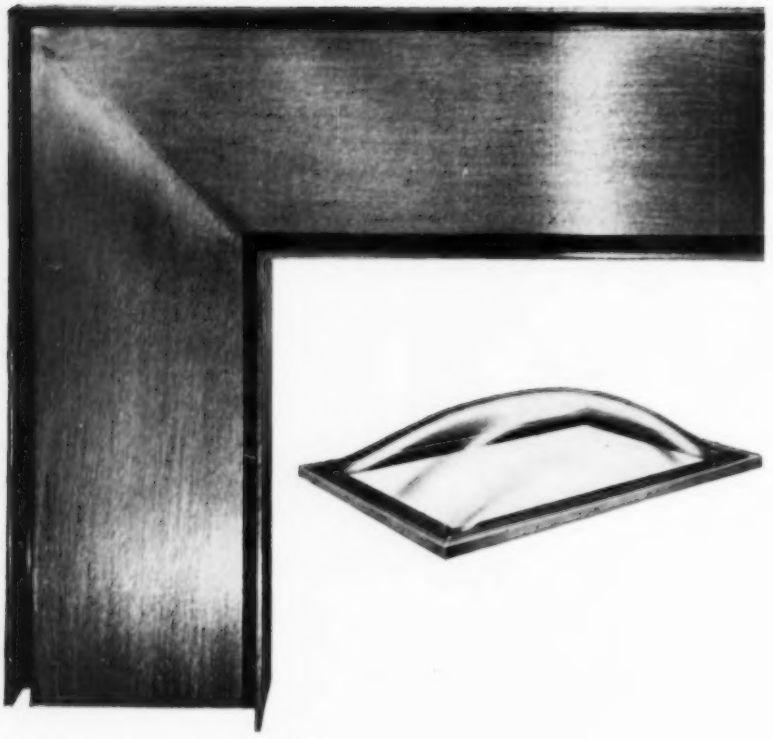

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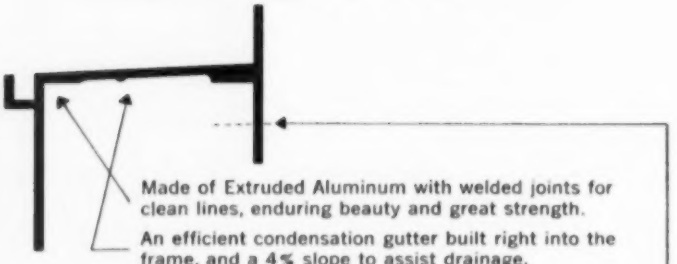

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Wasco Flashing Company, 90 Fawcett Street, Cambridge, Mass.

reviews

(Continued from page 186)

also are devoted to the control of rooming houses and the respective responsibilities of owners and occupants. B. L.

preparation for travel

Scandinavia. *Eric de Maré B. T. Batsford, Ltd., London, England. Distributed by The British Book Center, Inc., 122 E. 55 St., New York 22, N. Y., 1952. 262 pp., illus., $4.50*

The title of this book indicates that it is a travel book, but the reader will quickly realize that it is much more than that. For here is a travel book with an approach quite unlike the usual guide or Baedeker. The English critic, Harold Nicolson, once remarked: "Any traveller who wishes to write a book about foreign parts should decide, before he even embarks upon his voyage, on the purpose which his work will serve and the type of reader for whom it is intended." In the preparation of his book, de Maré has adhered to this advice, for his aim has been to encompass in a single volume as concise and comprehensive a picture as possible of Sweden, Norway, and Denmark—both past and present. He presumes that his readers are people of normal intelligence who are interested in all things pertaining to those countries and wish to obtain a far-reaching knowledge of the three countries, before and during a visit to them. It is for such an audience that he points his book.

The author's undertaking is a courageous one, for in a volume of some 80,000 words it would be quite impossible to tell everything one would want to know about one of the Scandinavian countries, let alone three. But by careful selectivity—and in this case it is selectivity of a personal nature—and a first-hand acquaintanceship with his subject, the author has been eminently successful in producing a work that is more than mere surface impressions. The book has sections devoted to each of the three countries, and in each section there are brief but telling chapters about the land and livelihood, the history and the heritage. With that as

(Continued on page 190)

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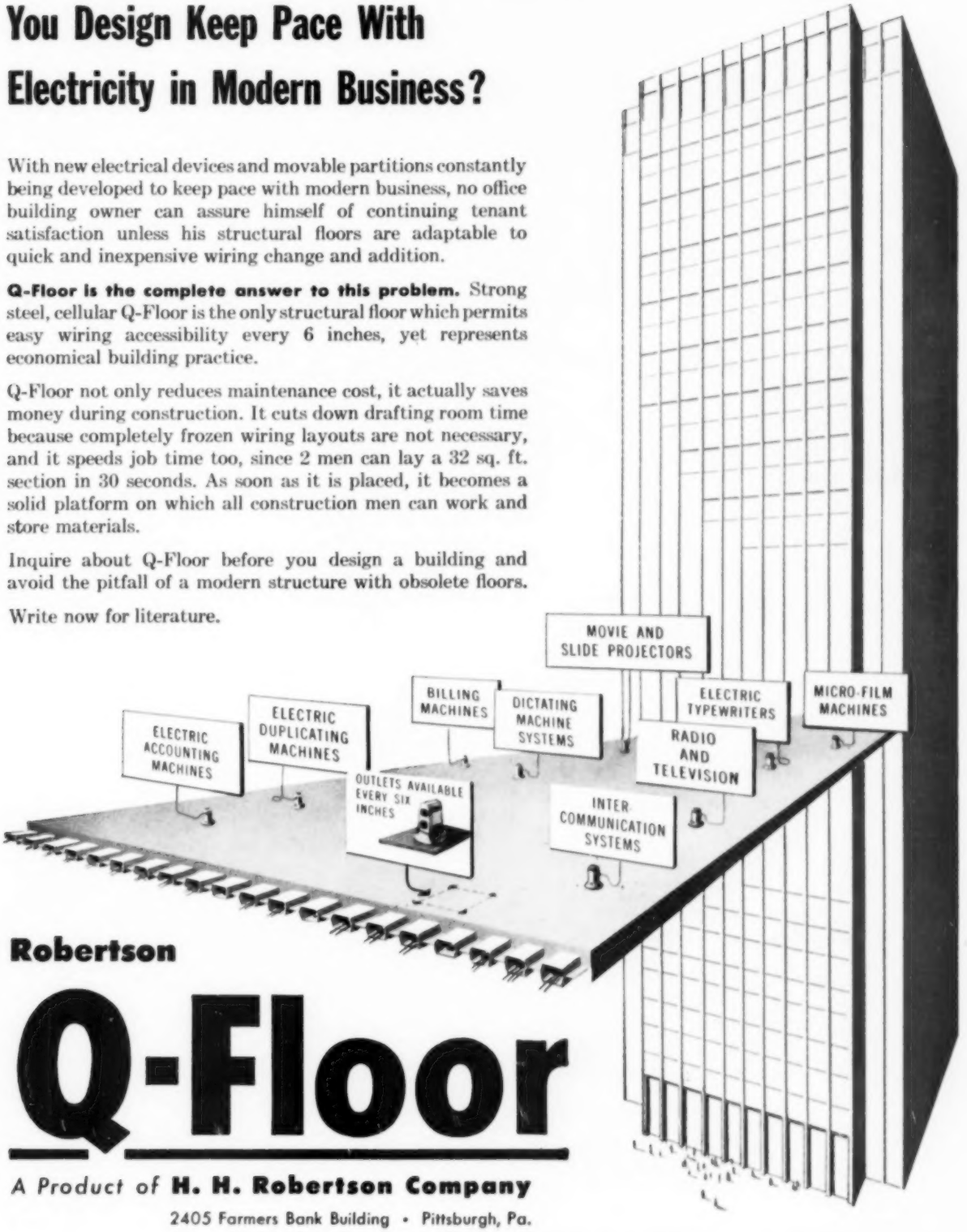

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reviews

(Continued from page 188)

a background, de Maré takes his readers on fascinating journeys to the various cities and provinces. The journeys may not always be in the orthodox manner, such as the one in Sweden, from coast to coast, most of the way by canoe across lake-studded country. Likewise in Norway and Denmark, the author has no set plans (in the usual travel service way) but stops when and where he wills. Wherever he leads his readers, they are bound to be richly rewarded with the descriptions of the scenery, the places, and the people.

As an architect and a writer on architectural matters, de Maré places special emphasis on the architecture of the Scandinavian countries, and wisely so, for through the "mistress art" one can best learn about the culture and history and world outlook of a country. After describing the Vasa period, for instance, in which the chief architectural expression in Sweden was in castles and manor houses of the noblemen, he treats upon church building from early Gothic times through the changes of the later centuries. The author is at his best in writing of the age of the Baroque, for in 17th Century Sweden this was a golden age of architecture, including such figures as Jean de la Valleé, the elder and younger Nicodemus Tessin, and Eric Dahlbergh. Tessin, the father, whose major work was the Drottningholm Palace—often called Sweden's Versailles—became City Architect for Stockholm and executed a great amount of work there, some of which can still be seen. The son's chief claim to fame was the Royal Palace in Stockholm completed in 1760.

Quite understandably in a book of this nature, not all the architectural periods nor glories can be touched upon; but little fault can be found with the author's discerning choice of material. Because of the great respect and influence of it throughout the world, Swedish Modern is fittingly included in the journeys around the country. One sees fine examples of the work of Gunnar Asplund, high priest, so to speak, of the Modern expression, as

(Continued on page 192)

The MFMA Northern Hard Maple floor of this stately ballroom (Medinah Country Club, Itasca, Ill.) was laid in 1926. This photograph, taken in 1952, offers eyesight evidence of the lifelong beauty which simple maintenance of a Maple floor insures.

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FIAT Doors fit standard 24" door openings. Easy to install on new or old stall showers of any type—steel, tile, marble or glass.

Look to FIAT DOORS for added beauty—more years of satisfactory service. When you specify a shower stall, include the vital, finishing feature . . . a FIAT DOOR.

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Simple design and attractive appearance at low cost—here's the fine quality and sound construction you would expect to find only at a much higher price. The Neptune measures 24 by 64 inches and is reversible for right, or left-hand hanging; one-piece satin-finished heavy aluminum frame with mitered corners and glass set in rubber channel. Extruded aluminum jambs, top and bottom suspension hinges. Bullet catch, offset handles and water deflector.

DOLPHIN

Here's unrivaled quality, finest construction! Standard 24 by 72-inch size—a full height door with grille; one-piece chrome plated frame of extruded brass with mitered corners; glass set in rubber channel. Chromium plated brass jambs and continuous piano hinge riveted to frame. (FIAT'S moderately priced *Zephyr* has the same appearance and features as the *Dolphin* but is made with satin-finished extruded aluminum frame).

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reviews

(Continued from page 190)

well as of Sune Lindström, Sven Ivar Lind, and Nils Einar Eriksson, whose concert hall in Gothenburg is undoubtedly the finest modern building in the ancient city.

In writing about Norway and Denmark, the author follows the same pattern employed in the section on Sweden—unconventional wandering about, pointing out here and there highlights of interest for the traveler in the major cities and in the provinces. Altogether this is the best introduction to Scandinavia in print at the present time. And in addition to his ability as an author, de Maré is an expert photographer. The hundred or more illustrations include examples of his work, so that the text and the pictures are integrated to an extraordinary degree. Unlike most travel books, which are mainly descriptions of places to see and things to do, this one has a final chapter called "Proper Study," in which there is a revealing analysis of the psychology, temperament, and national character of the several Scandinavian peoples. To any traveler, this is of value in making a trip more enjoyable. FRANK A. WRENSCH

practical for letterers

Architectural Lettering for Plans and Ornamental Design. *Arthur E. Burke, Art Director, American Technical Society, with the collaboration of Truman C. Buss. Chicago: American Technical Society, 848 E. 58 St., Chicago 37, Ill. 1953. 187 pp., illus. $6*

A handsomely produced volume, *Architectural Lettering* provides architects with a practical guide to lettering technique, appropriate arrangements for various architectural or design projects, and methods of creating individual lettering styles in plans or ornament. It will probably be most useful to the relatively inexperienced letterer, although the Old Hand will find much here to point out some of the errors he may have been committing for years.

A large part of the book is given over to step-by-step instruction in the actual

(Continued on page 194)

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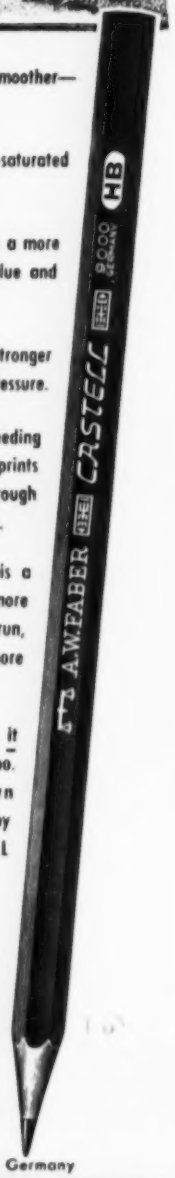

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the drawing pencil with the Master Degrees

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A.W. FABER-CASTELL

PENCIL COMPANY, INC., NEWARK 4, N. J.

reviews

(Continued from page 192)

formation and drawing of letters, of which there are a great many helpful sketches and explanatory observations. The authors emphasize basic forms, from Roman inscription and manuscript lettering to modern types of brush, script, serif, and sans serif treatments.

One might like to see a greater variety of today's styles than is contained in this volume, and a few of the photographed examples of what the authors deem effective, appropriate lettering on store fronts and other buildings might give cause for argument. However, any inadequacies that may be in *Architectural Lettering* are amply made up for by the full and well-illustrated discussion of good lettering design, correct application, and how to achieve both with minimum effort and loss of time.

HARMON TUPPER

books received

Architectural Detailing. Caleb Hornbostel and Elmer A. Bennett. Reinhold Publishing Corp., 330 W. 42 St., New York 36, N. Y., 1952. 221 pp., illus., $12

Pedagogical Sketchbook. Paul Klee. Frederick A. Praeger, 105 W. 40 St., New York 18, N. Y., 1953. 64 pp., illus., $3

American Decorative Wall Painting. Nina Fletcher Little. Studio Crowell Publications, 432 Fourth Ave., New York 16, N. Y., 1952. 145 pp., illus., $10

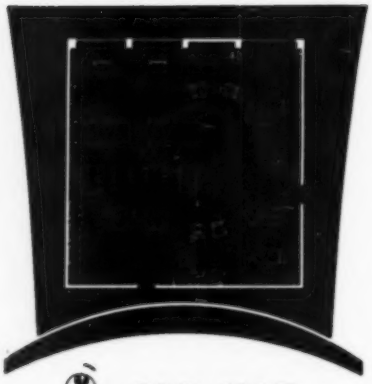
Planning Elementary School Buildings. N. L. Engelhardt, N. L. Engelhardt, Jr., and Stanton Leggett. An Architectural Record Book, F. W. Dodge Corp., 119 W. 40 St., New York 18, N. Y., 1953. 275 pp., illus., $12.50

A Theory of Architecture. Victor Hammer. Wittenborn, Schultz, Inc., 38 E. 57 St., New York 22, N. Y., 1952. 95 pp., $4.80

Architectural Graphics. C. Leslie Martin. The MacMillan Co., 60 Fifth Ave., New York 11, N. Y., 1952. 213 pp., illus., $4

Sunset Outdoor Building Book. Lane Publishing Co. Menlo Park, Calif., 1953. 436 pp., illus., $4.95.

Our World From the Air: An International Survey of Man and his Environment. E. A. Gutkind. Doubleday & Co., Inc., Garden City, N. Y., 1952. Illus., $7.50.



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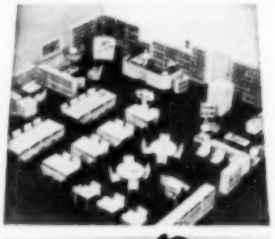

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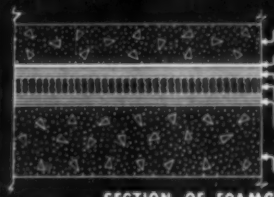
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SECTION OF FOAMGLAS APPLICATION

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Average	16.7	104	6.24
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†Ratio of non-weatherstripped to weatherstripped par-infiltration.

The above facts, plus the complete story on weatherstripping is presented in Bulletin No. 35—"Air Infiltration Through Weatherstripped and Non-Weatherstripped Windows," published by the University of Minnesota, Institute of Technology. The facts showing the economic value of weatherstrip are based on over-all research of climatic conditions in 12 selected cities in the U.S. covering a full range of weather conditions.

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victories and defeats

(Continued from page 20)

sented in a fashion that arouses enthusiasm and cannot fail to win followers.

•

After this optimistic experience it is hard to decide whether the book, *Built in USA: Post-war Architecture (reviewed on p. 172, February 1953 P/A)*, published as a catalogue for the exhibition, is to be applauded or deplored for driving home every negative aspect threatening the future development of the progressive architect: preciousness, academism, historical ignorance, and lack of social consciousness.

There can be no doubt after reading the three articles by Philip Johnson, Henry-Russell Hitchcock, and Arthur Drexler that the grove where Plato walked among his disciples is now situated on what Drexler calls "Chicago's strand." But the new academism of "Miesian discipline," which is the Leitmotif of this book, is historically incorrect. Mies van der Rohe is the belated heir—not the teacher—of the pioneers of glass architecture. The Egyptian Mausoleum of his Kroeller House of 1912 was built 18 years after Burnham's Reliance Building, a full 10 years after the glass bays of Perret's "25 Rue Franklin," and one year after the Fagus factory by Gropius (who comes in for incomprehensibly unfair treatment in the Museum book). To assert, as does Hitchcock, that "the actual work of the Gropiusites (sic) derives in fact more from the practice of his former pupil and partner Breuer than from his own," or that "some of the credit must go for a good deal of Gropius' early work in this country" to Marcel Breuer, is to confuse the impact of genius with that of talent.

Since the beginning of building history, later generations have formed their standards on a few structures of unique greatness, and not on a quantity of good dwellings. In a complete misproportion to the prevalence of the name of one of the two "greatest masters," occurring on each page, the two main buildings by Mies van der Rohe that were in the exhibition are open to a lot of inquiry. The Lake Shore Drive apartment houses most certainly

(Continued on page 198)

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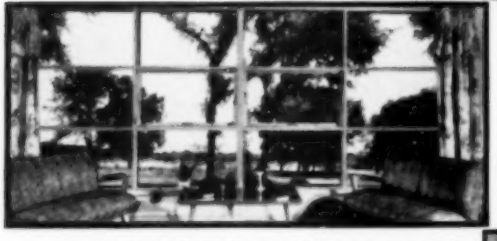

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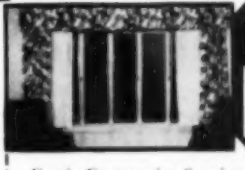

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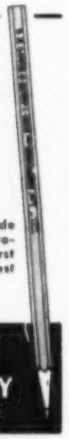

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victories and defeats

(Continued from page 196)

make, to quote an enigmatic passage from Hitchcock's article "real sacrifices . . . in variety, in detailed expressiveness and even in certain psychological aspects of comfort—in privacy for example, and in separate spatial provision for separate living functions." These sacrifices are made to provide a new façade architecture in which the same deadly uniformity that Palladio achieved through repetition of round- and square-headed bays, manifests itself through "structural elements primarily for nonstructural purposes" and through curtains of uniform color and material, imposed on each tenant. The lightless and airless bathrooms and kitchens, the impassable dining bays, the disquieting psychological effect of transparent living quarters facing each other, were carefully omitted from the exhibition. What Drexler calls "the most refined style of our time" culminates in the Farnsworth house which is described as "a quantity of air caught between a floor and a roof" (as which house isn't), and where touching the columns "in passing, these horizontal elements seem held to their supports by magnetism."

It adds nothing to the comprehension of building to define "the Miesian discipline" as "fixing its practitioners on the business of piecing together the elements of modern building," to speak of "absolute Platonic architectural space, serenely independent of the transitional emotional values," of "clarity of revelation," and of "subtle deliberate and tense" (neatest psychological trick of the week) architecture. We are today in real danger of adopting for building reports the esoteric double-talk that has made contemporary art criticism ridiculous. No amount of incantation can obscure the fact that the two Chicago skyscrapers depend for their effect on a purely quantitative use of glass, and that nothing in their design supersedes or even equals their local ancestors of the Chicago School.

It is greatly to be regretted that the social implications of modern architecture get only a timid demonstration in the important Skidmore, Owings & Merrill garden apartments in Oak Ridge, and in the excellent Eastgate Apartments in Cambridge. "As building costs rose," writes Hitchcock, "architects prated (sic) only of economy," for which they are accused of "bad taste." But it would have been of great value to students of American architecture if some of the talent of the three authors could have been lent to the implications of economy building: because from an economic and a sociological aspect one more modern villa in California or Connecticut is totally irrelevant. The great problem confronting American architecture is the multiple dwelling that decides the lives of millions.

It is fervently hoped that the next exhibition of U.S.A. architecture will apply "the conscientious continuous resolute distinction of quality from mediocrity" and the definition of "significance" to "the common house"—but that the high skill of exhibition technique and the exquisite taste of visual presentation will be maintained.

notices

STANLEY A. CROFMAN has been appointed president of Carbide and Carbon Realty Co., a division of UNION CARBIDE AND CARBON CORP., according to an announcement by MORSE G. DIAL, president of the Corporation.

E. C. HODGES, vice president of the DETROIT STEEL PRODUCTS CO., announces the appointment of ROBERT C. FINDLAY as assistant manager of the FENESTRA BUILDING PANEL DIVISION.

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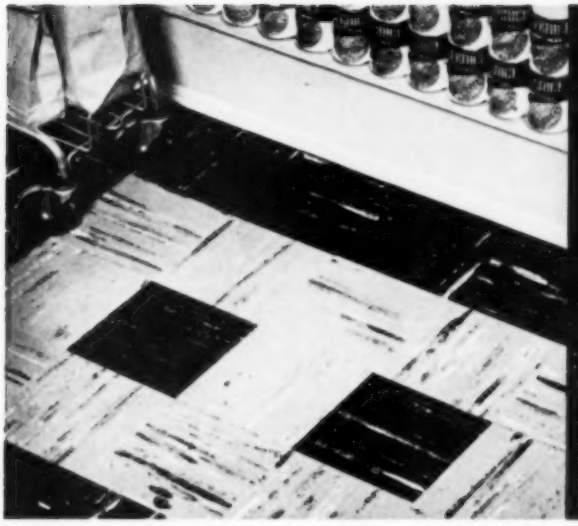

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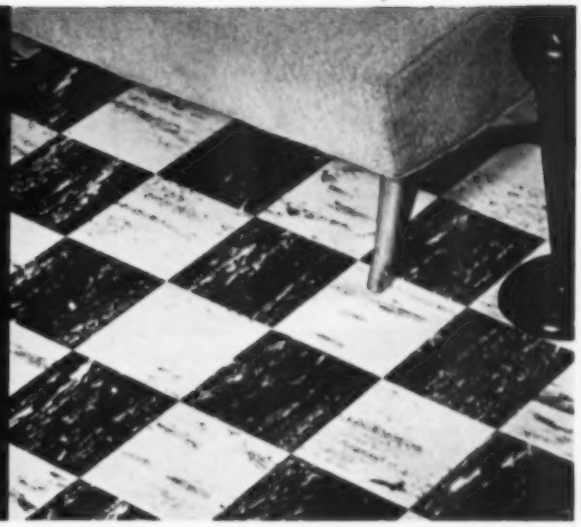

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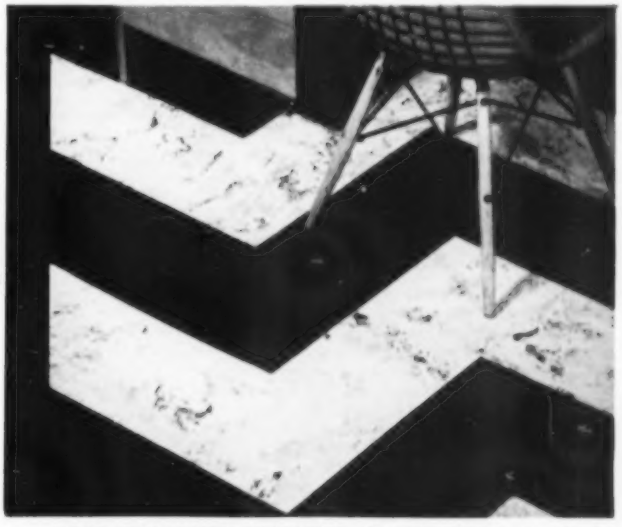

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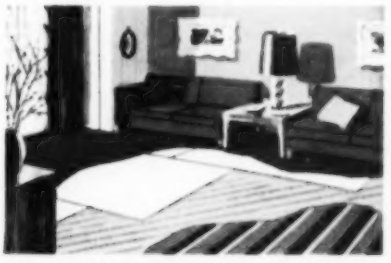

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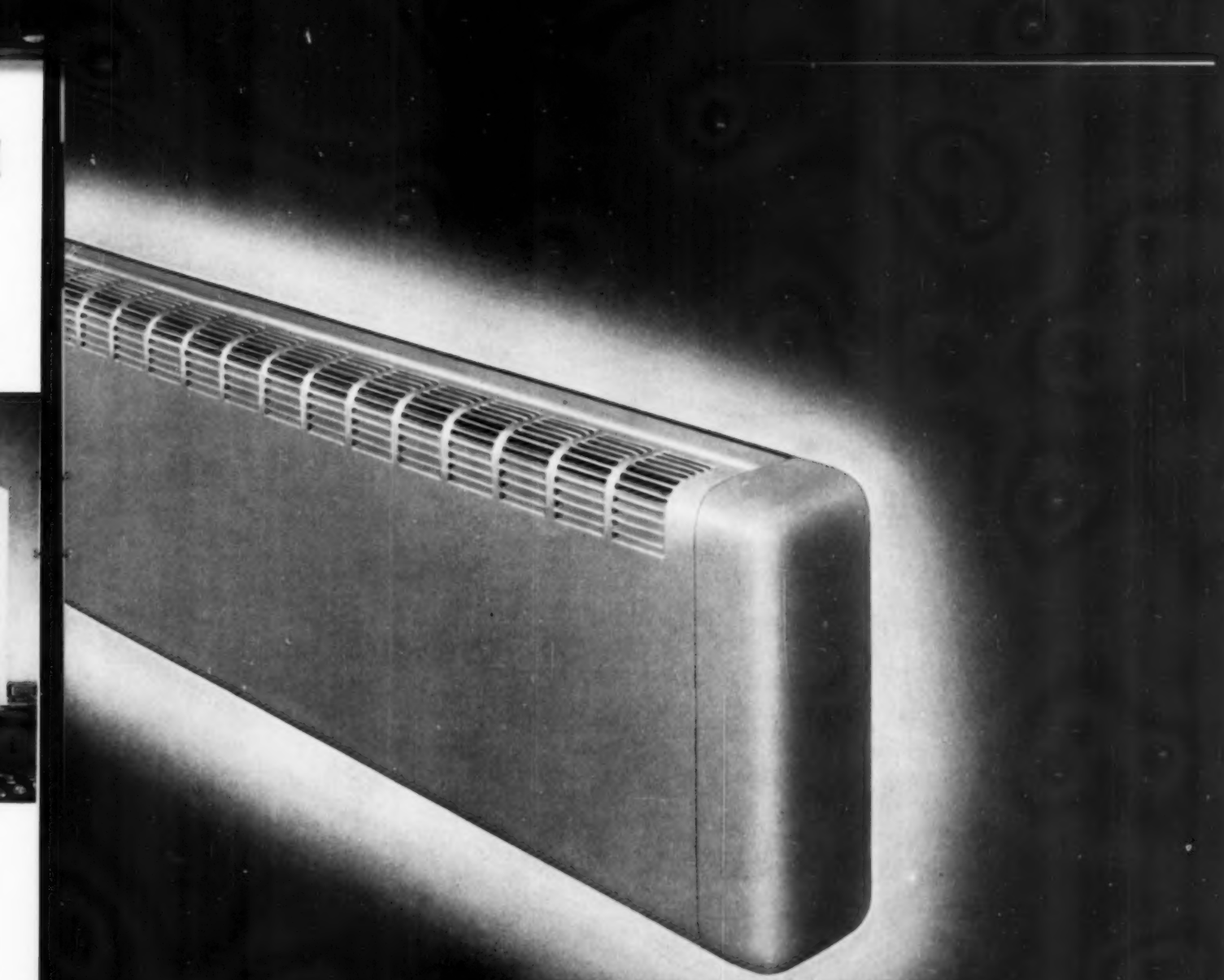

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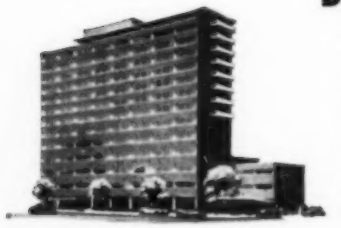

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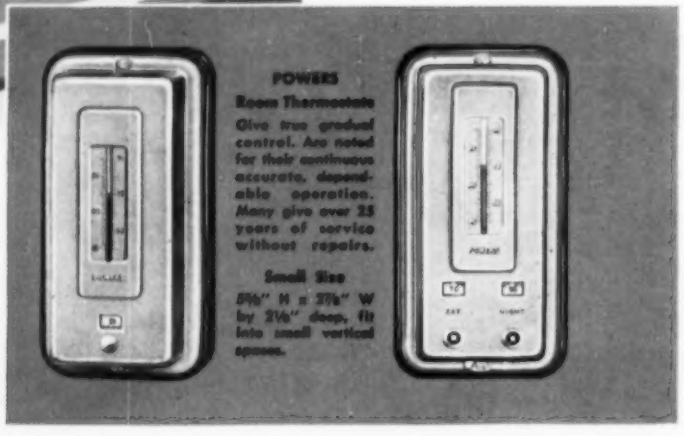
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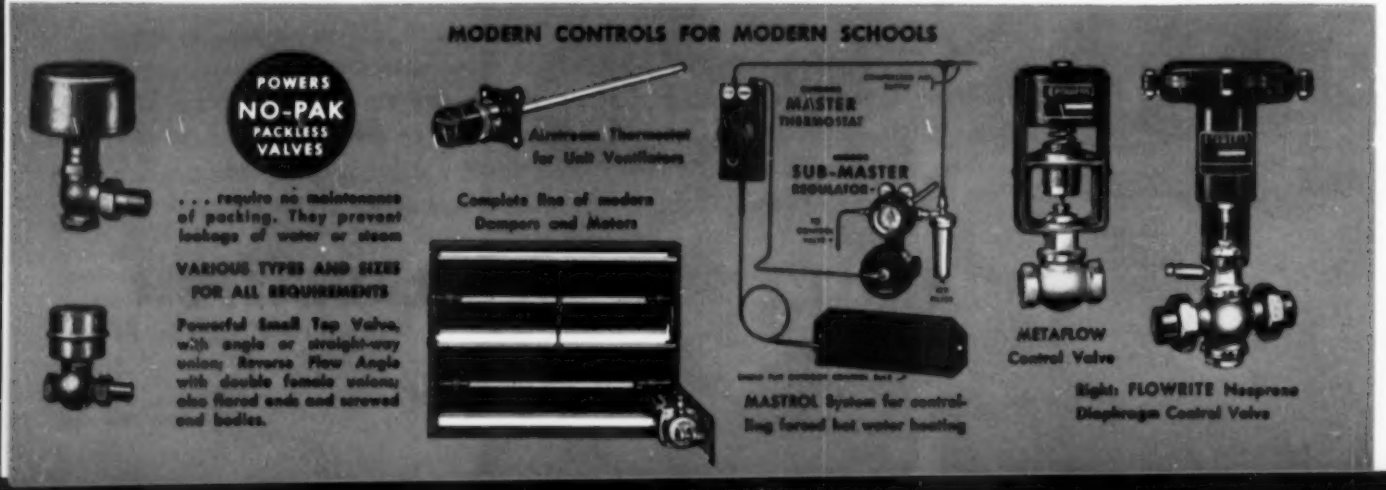
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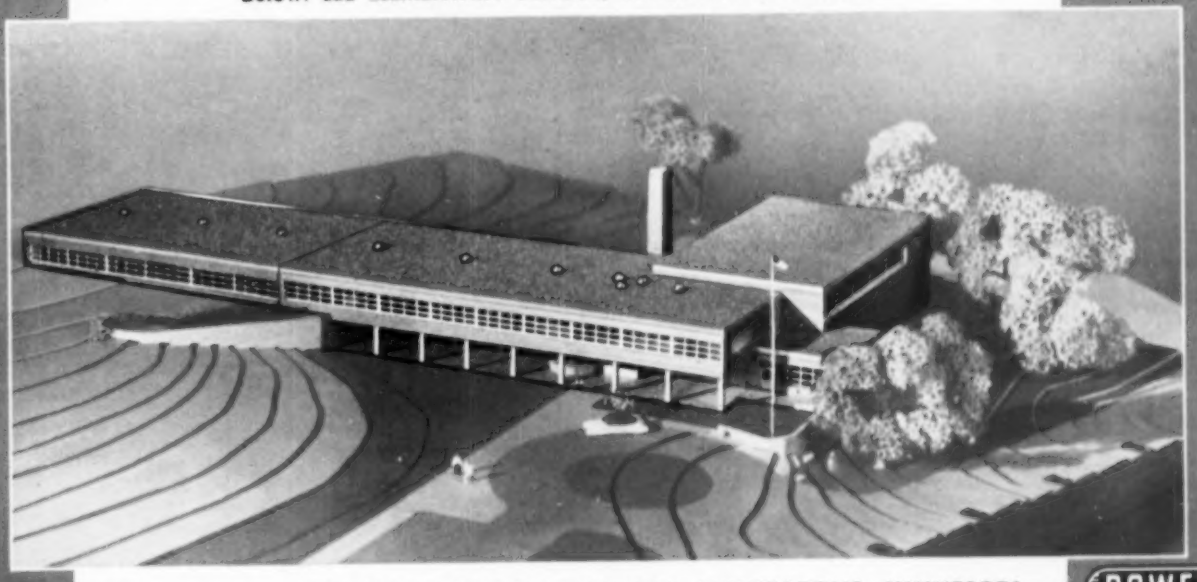
POWERS

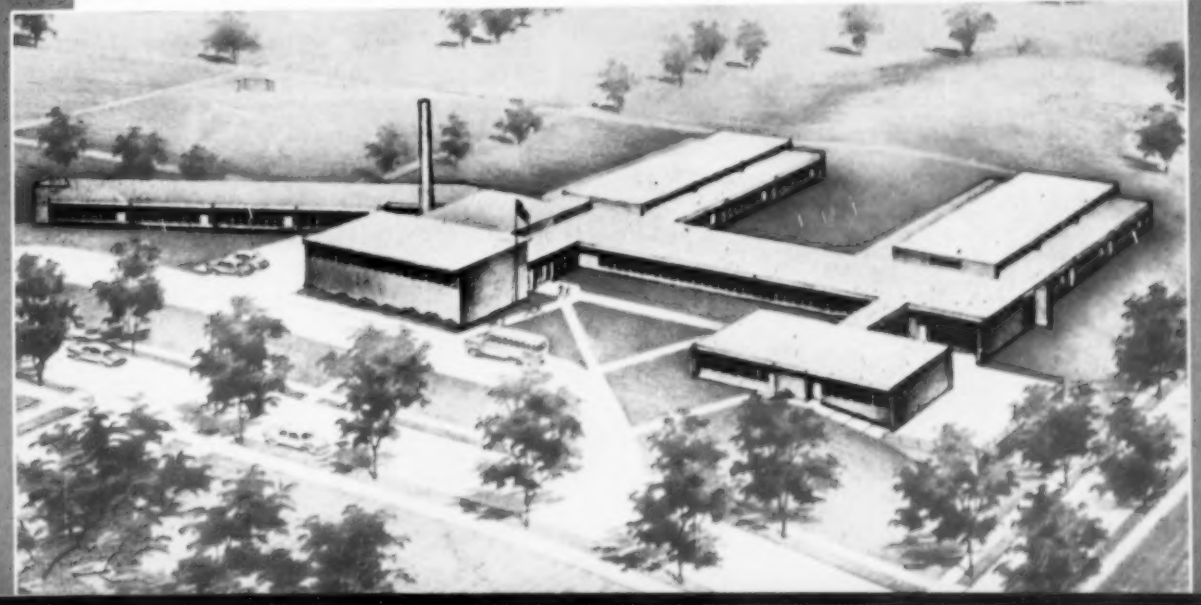
Below: LEE ELEMENTARY SCHOOL, MANHATTAN, KANSAS



Architects and Engineers
E. O. WOLFENBARGER & ASSOCIATES
Contractor: WOODHULL PLUMBING CO.

—Below: MAUDE ARMITAGE ELEMENTARY SCHOOL, MINNEAPOLIS, MINNESOTA—

POWERS



Architects and Engineers: MAGNEY, TUSLER and SETTER and PERKINS & WILL
Contractor: H. E. NICHOLS PLBG. & HTG. CO.

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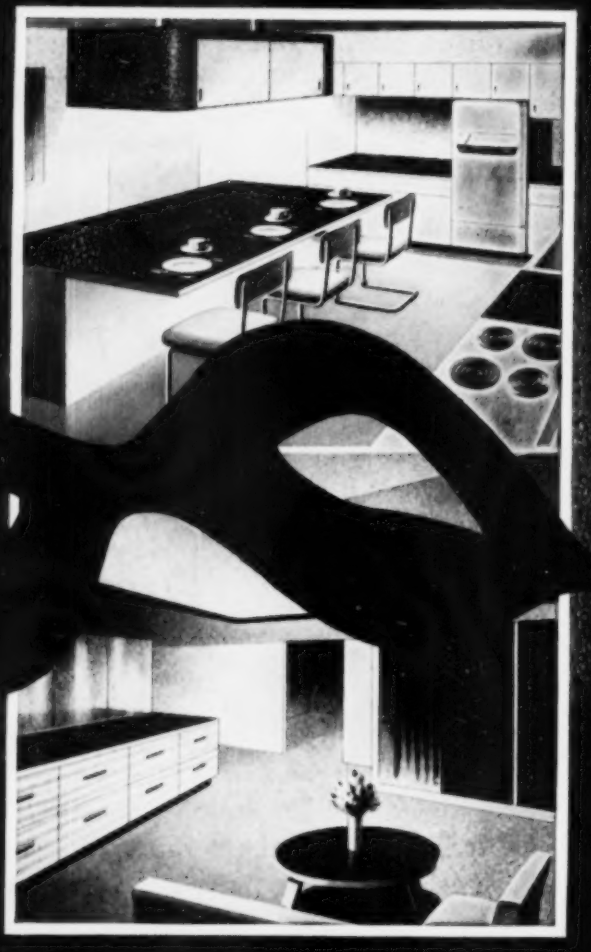
MARDI GRAS



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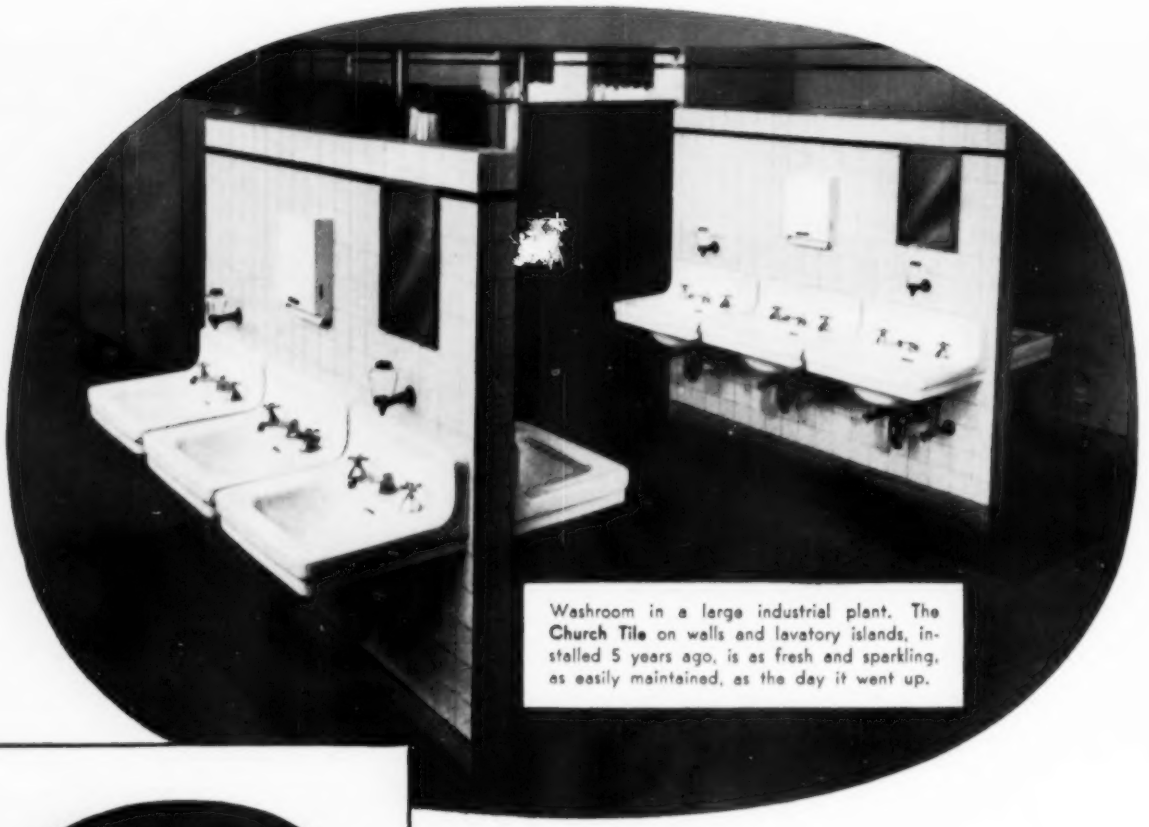

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Architect: Albert Kahn, Inc., Detroit
General Contractor: Turner Construction Co., Boston

present and future power requirements

Quick Facts

About 4 types of Flex-A-Power which, in combination, will meet almost any low voltage distribution requirement.

*TYPE LVD. For high capacity feeder applications, or as a riser in multi-story buildings carrying high currents over long distances, with low voltage drop. 600-4000 ampere ratings, 2-, 3- and 4-pole and 3-phase, 4-wire solid neutral, 600 volts.

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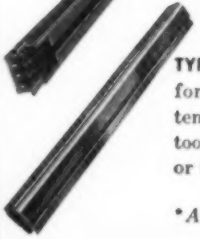

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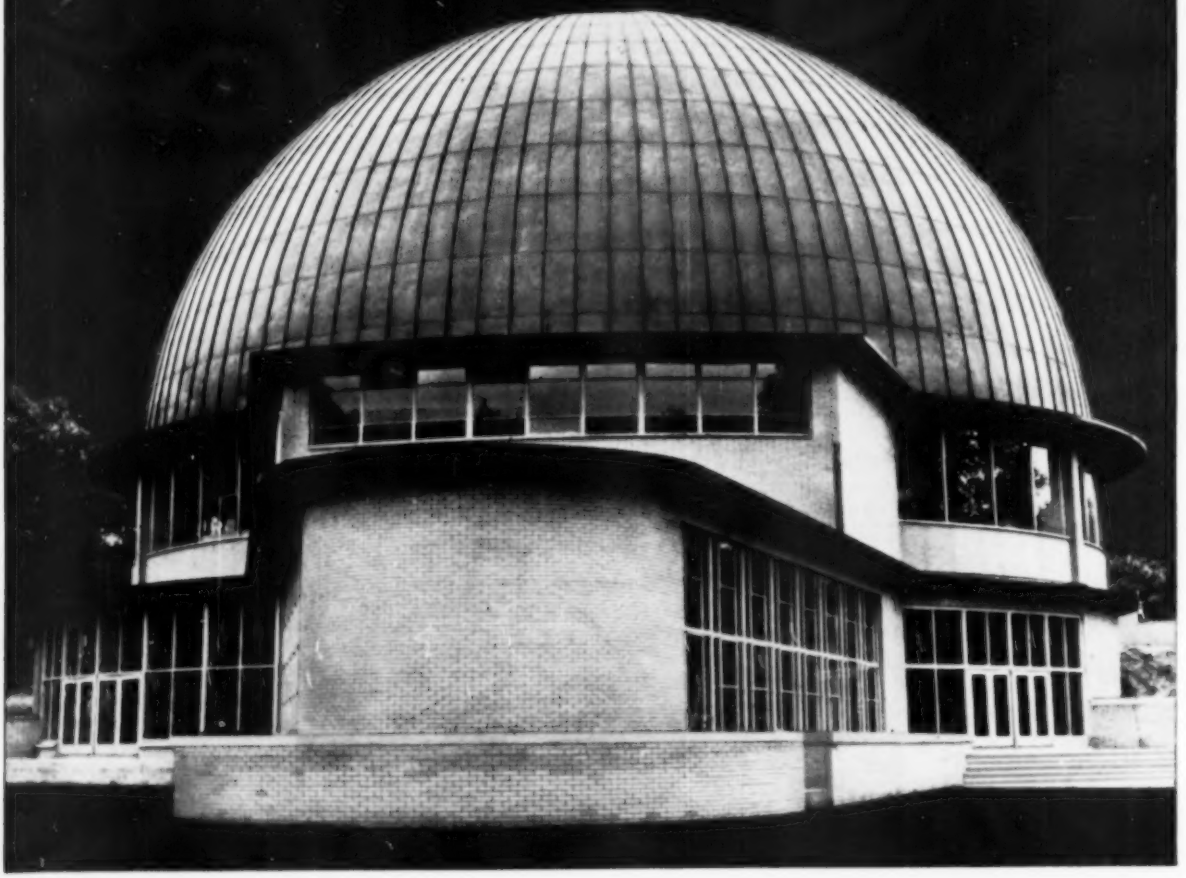

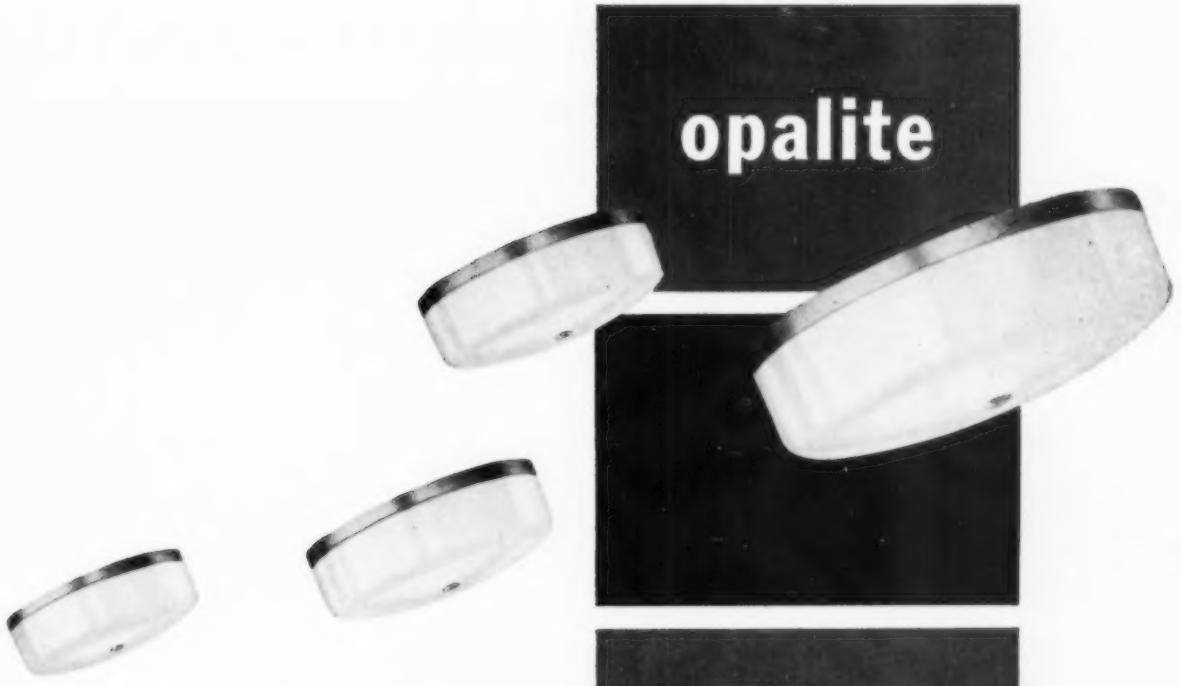

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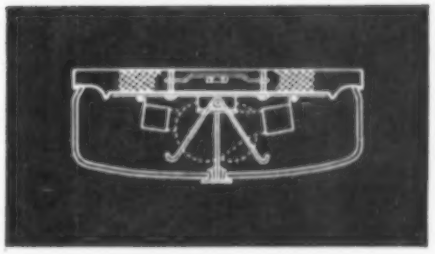

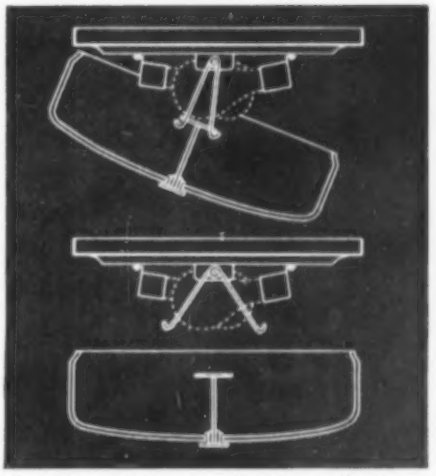

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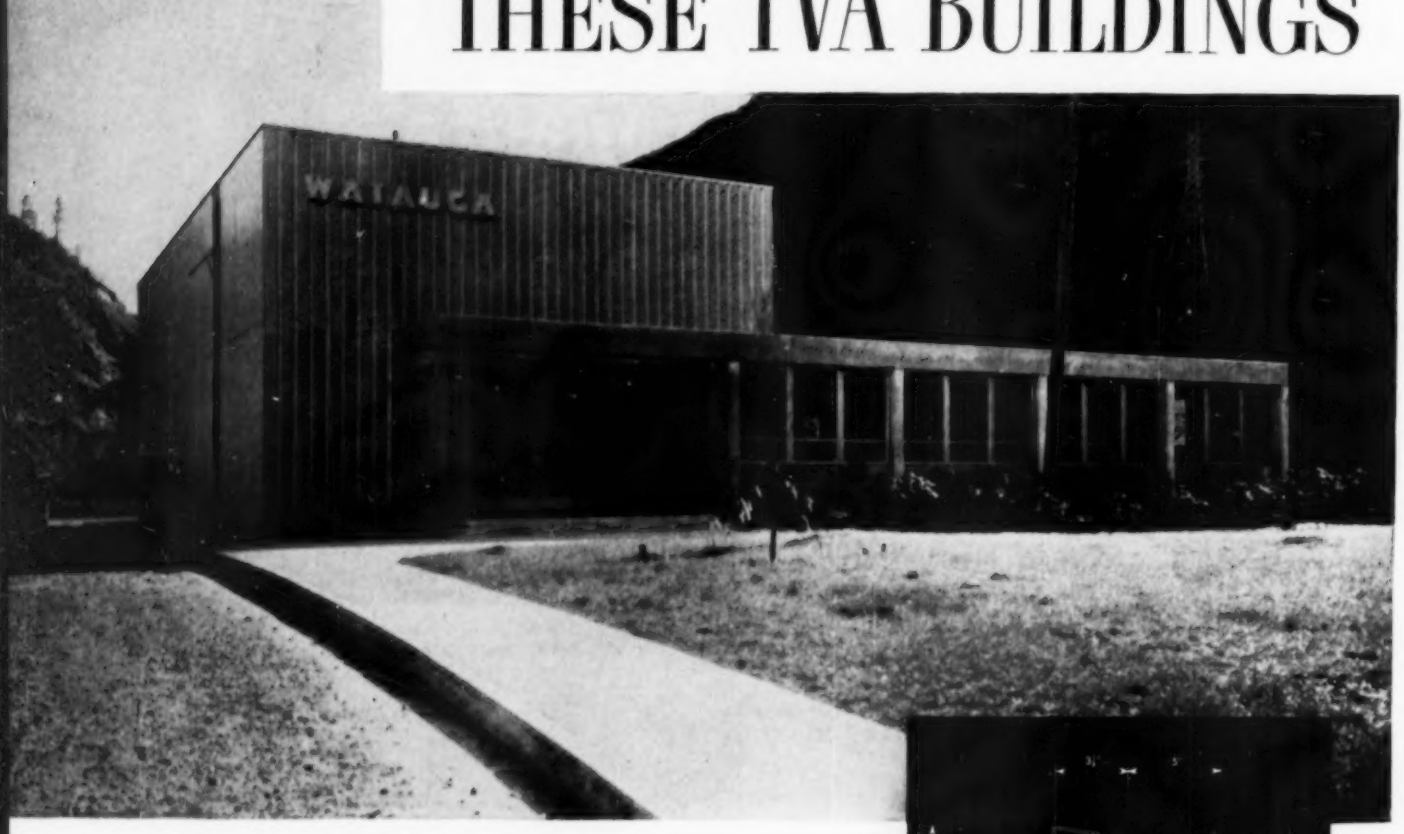
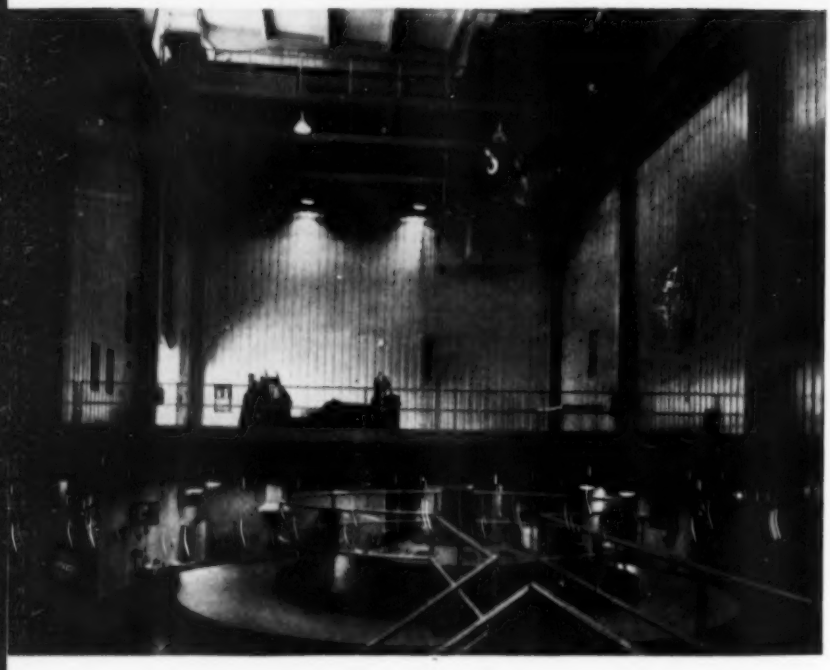
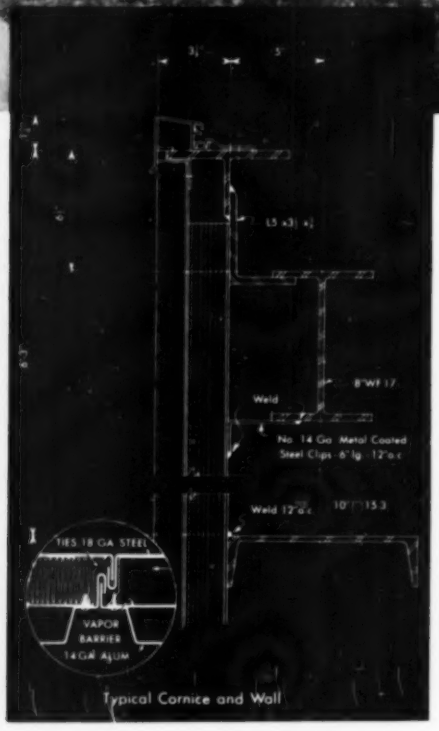


Watauga Dam powerhouse and control building



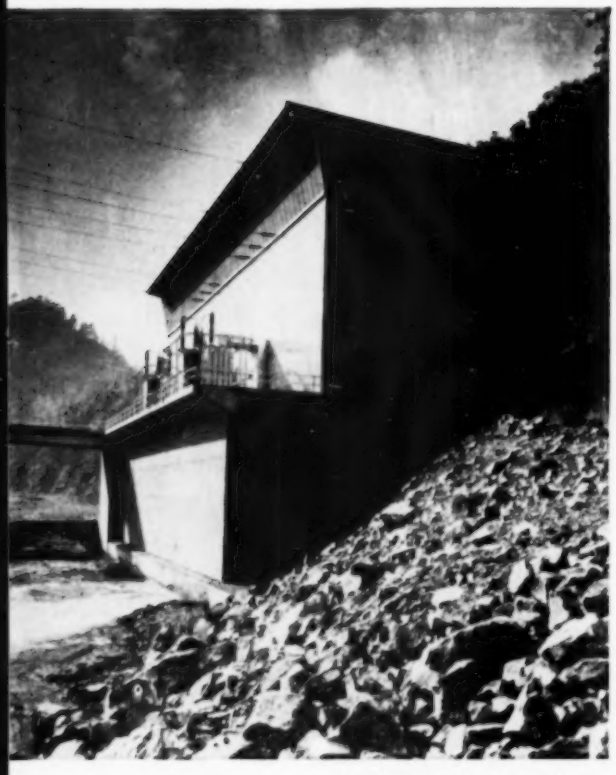


Typical Cornice and Wall

Details of wall and roof
Watauga Dam control building

All buildings designed by Tennessee Valley Authority Design Department.
Constructed by TVA Construction Department

HAVE FOUR THINGS IN COMMON



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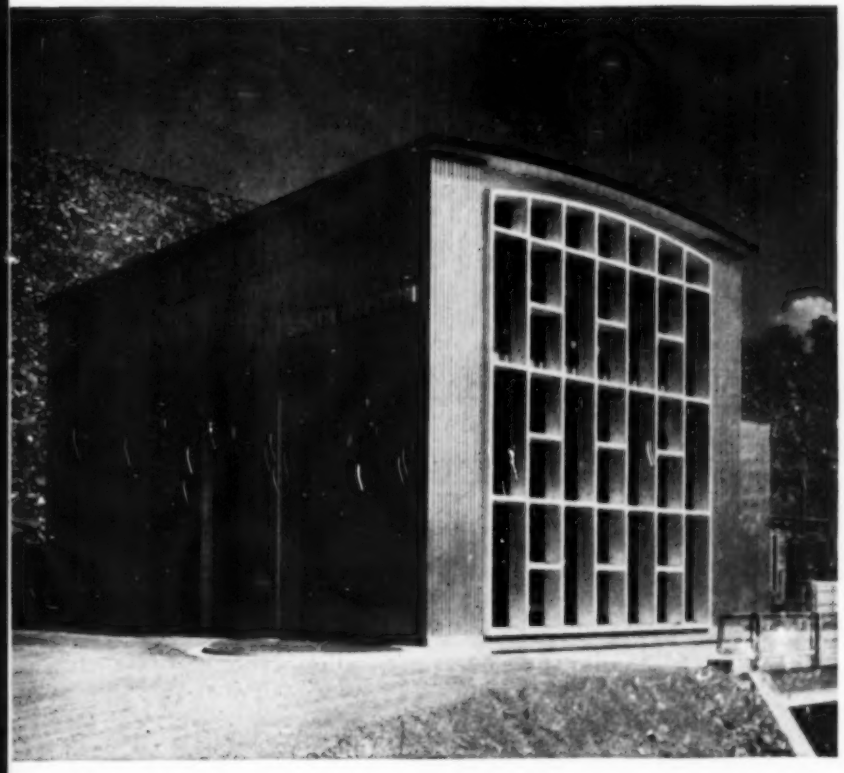

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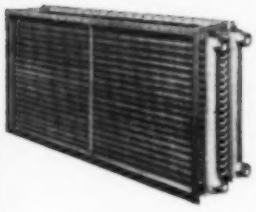

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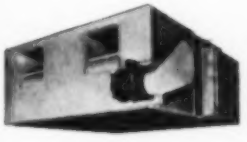

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AIR CONDITIONER
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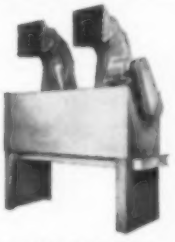

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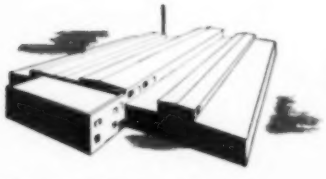

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PLANT 2—1729 Broadway N. E.
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PLANT 3—4th and Park Ave.
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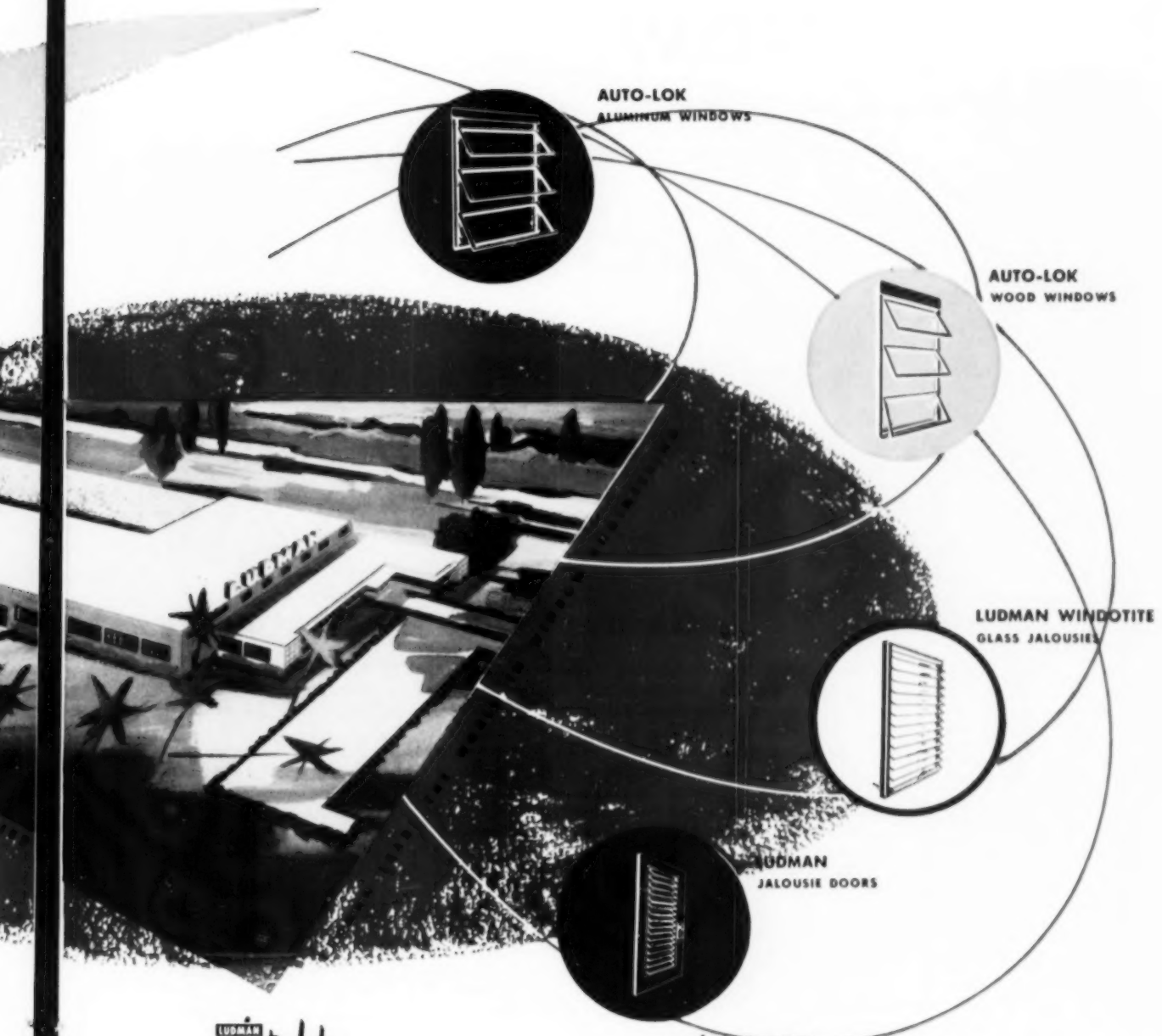

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THE AUTHOR

In the past few years, Bernard Tomson has lectured on architectural and engineering law before several chapters of the American Institute of Architects as well as at regional conferences of that organization. In 1951 Mr. Tomson served as a visiting lecturer in the Architectural School at Massachusetts Institute of Technology.

The author of ARCHITECTURAL AND ENGINEERING LAW is a member of the New York and Massachusetts bars and is admitted to practice before the New York Federal Courts and the United States Supreme Court. He is a partner in the New York law firm of Bernstein, Weiss, Tomson, Hammer and Porter. His clients include architects, engineers, builders and others concerned with real estate. Mr. Tomson is the author of a monthly column "It's The Law" in *Progressive Architecture* and a contributor to other magazines. ARCHITECTURAL AND ENGINEERING LAW is his first book.

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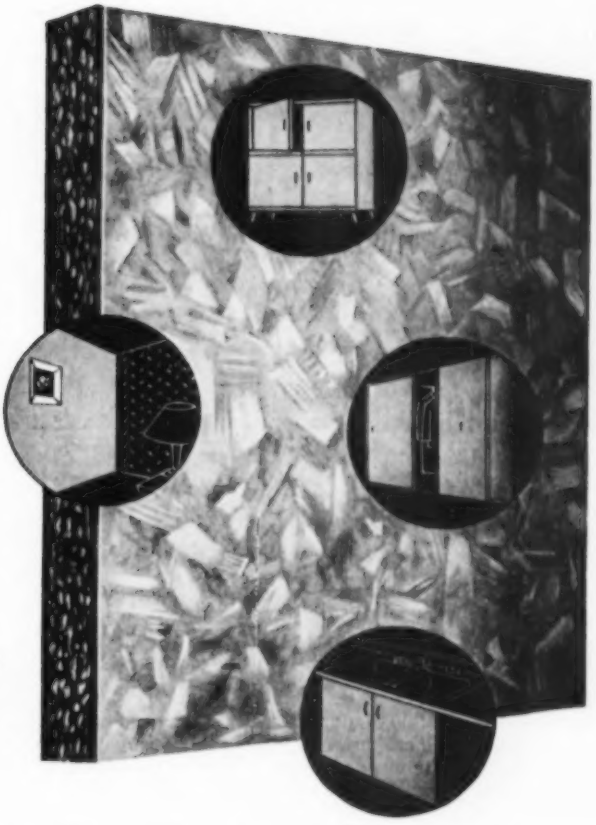

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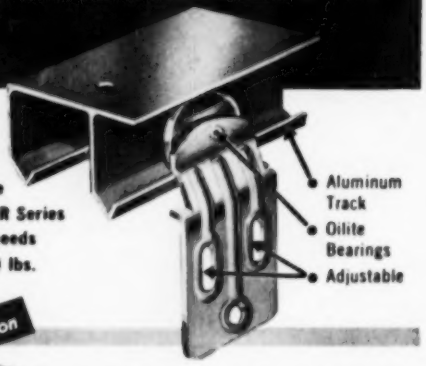

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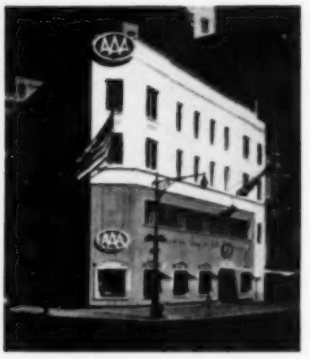

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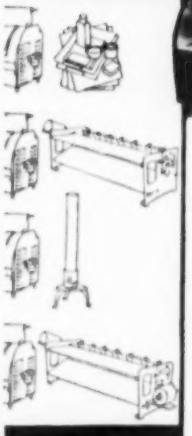

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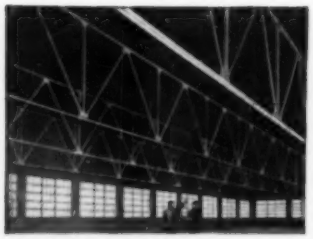

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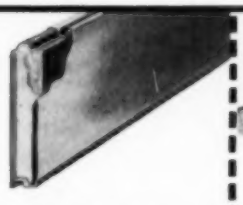

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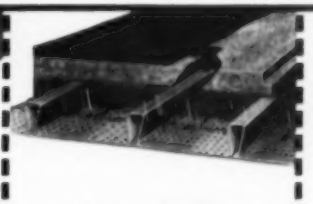

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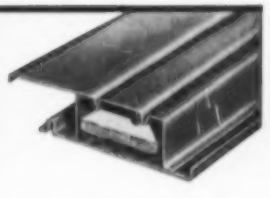

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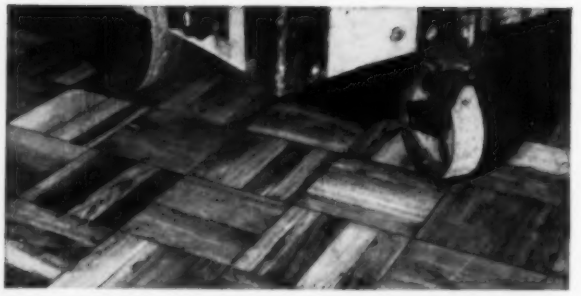

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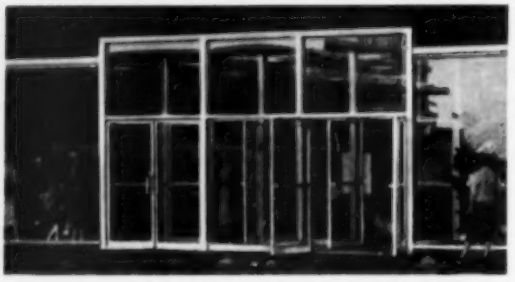

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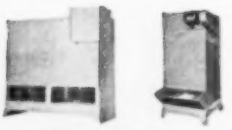

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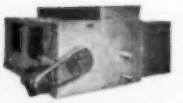

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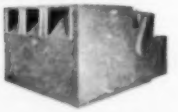

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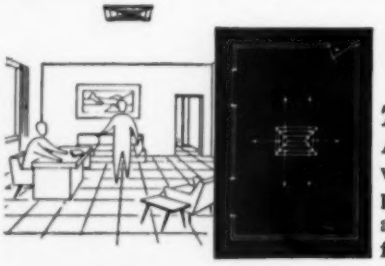

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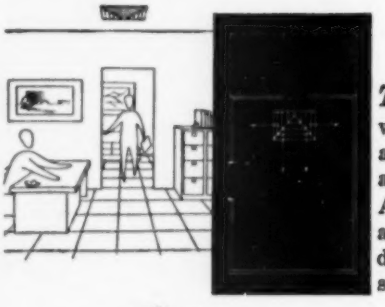

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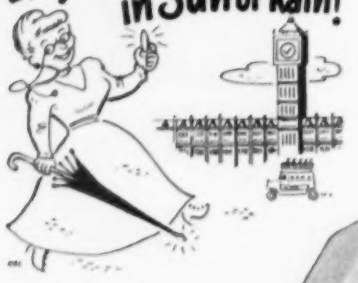

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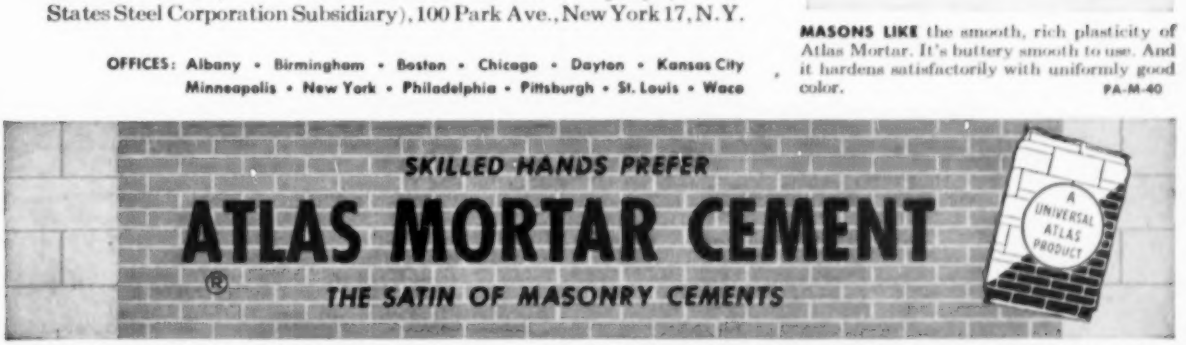

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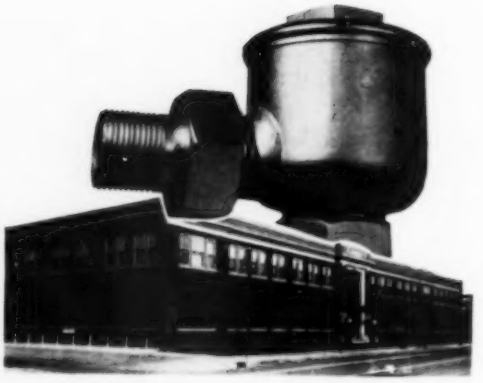

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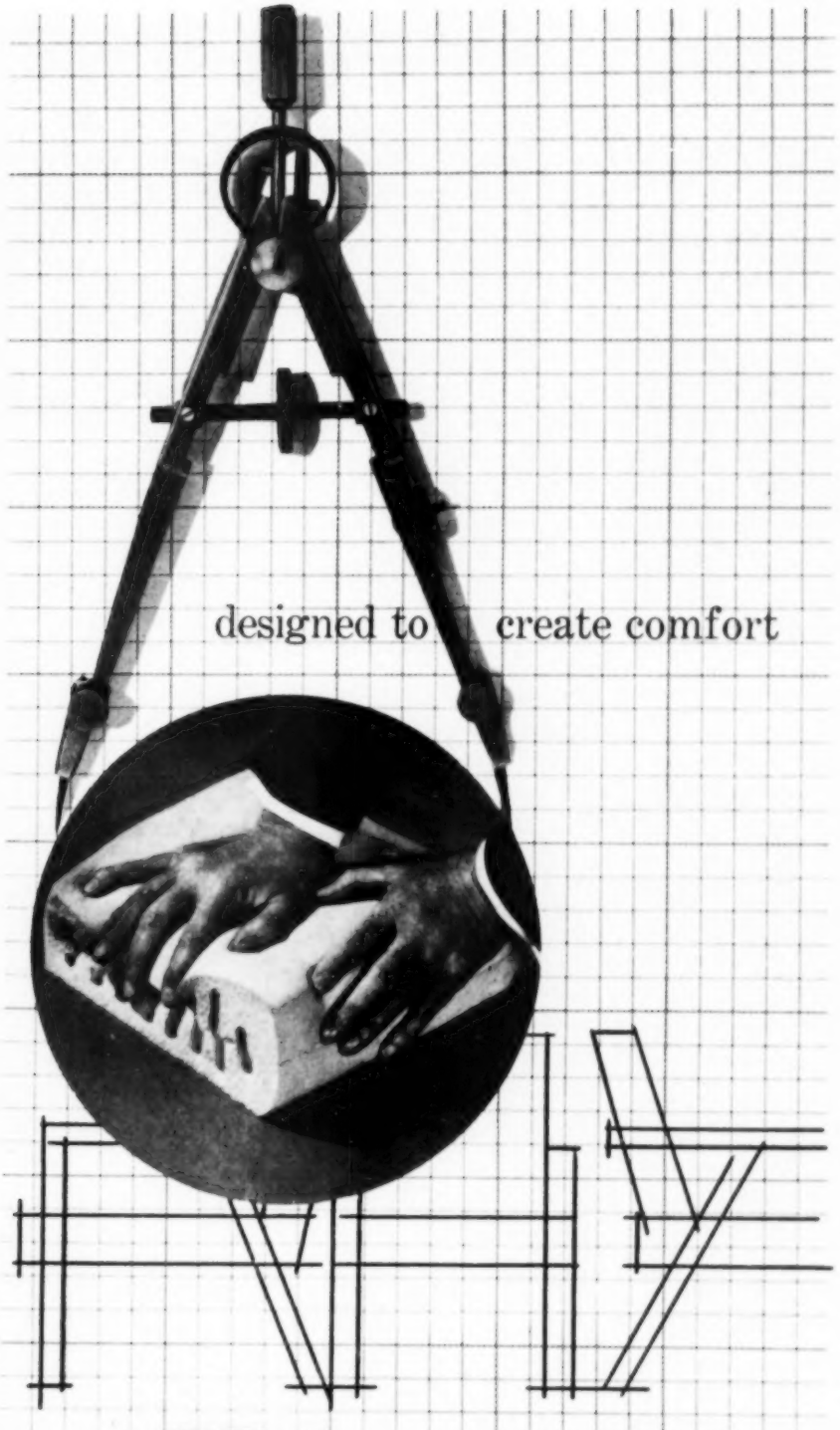

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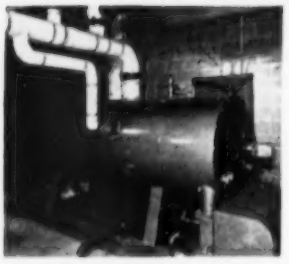

Above—Entrance to the new Essex County Colored School, Tappahannock, Va., which is the first unit of a consolidated school unit.

Left—Model SPL-50-5 Steam-Pak Generator, manufactured by York-Shipley, Inc., York, Pa., installed in school boiler room. Space provided for two more boilers when additional units of school are added.

TAPPAHANNOCK, VA.—The new $205,199 Essex County Colored School, which was opened here last fall, is heated by a 50-hp. low pressure Steam-Pak Generator which was selected because it offered three-way cost savings.

"The Steam-Pak Generator was selected because original building costs were reduced by omitting the stack, installation costs were lower because of simplicity of hook-up, and, most important, for economy of operation," J. Henley Walker, Jr., Architect of Richmond, Va., reported.

The new school building is the first unit of a consolidated school and includes 10 classrooms, library, general purpose and cafeteria room, kitchen, office suite and clinic. Additional units planned for the school are six more elementary classrooms and high school facilities. Space has been provided in the boiler room for additional steam generators.

The heating system was installed by Virginia Plumbing & Heating Co., Inc., Richmond, Va., for Howard Mitchell, Richmond, Va., General contractor. The Steam-Pak Generator was sold by Pelouze Sales Co., Hillcrest Bldg., Richmond 19, Va., distributor.

Other new Virginia schools which have installed Steam-Pak Generators, according to Henry L. Pelouze, manager of Pelouze Sales Co., include Carter G. Woodson Elementary School and Hopewell High School Gymnasium, Hopewell; Walker-Grant and James Monroe High Schools, Fredericksburg, and Dunbar, Booker T. Washington, and Bankhead Magruder Schools, Newport News.

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P.S.

I am fascinated by the responses—some are printed on the VIEWS page this month—to the article I wrote, based on an interview with Vlassov, Chief Architect of Moscow, which we published in March. I purposely avoided any editorializing in that piece—it was straight reporting. Here, on my own personal page, I would like to add a few comments of my own—solely on the matter of esthetics and not considering volume of building or broad planning principles, for the moment. In the first place, I think that the work being done in the Soviet Union and in countries under Soviet influence is a crude, heavy, unimaginative classicism (not a neo-classicism, in the sense that we understood it here in Paul Cret's work, for instance, which added a fresh, broad-scaled personality to eclecticism; nor the sensitive copying of well-chosen details that was part of Thomas Jefferson's approach). If this is so—and I think most of our readers will agree with me—why bother about their criticism of our work? Because, I believe, the three main arguments Vlassov raised are very much to the point, and, in a sense of self-evaluation, we owe it to ourselves to make sure we have the answers to them, not in the form of further semantics, but as true accomplishment or at least promise.

Vlassov's points are well-chosen, let us admit. One can say, "In many ways I agree," as Ralph Walker does; or, "In the main, Vlassov is right enough," as Frank Lloyd Wright does. Or one can argue that Vlassov's words are simply words: "I do not know what he means (by a democratic architecture) in a country where everything which is done is ordered from above," as Gropius says; or ". . . both East and West do intuitively what they like best, then construct elaborate theories to explain it," in the words of Belluschi. But I found, as I thought about this interview, that the three points were not too easy to answer.

In the first place, the question of what is a democratic architecture cannot be solved easily. On the two extremes, it is true that a socially useful architecture cannot be found if the architects are practicing in an ivory tower and talking only to themselves. This has happened in our time, and some in-drawn cliquishness still remains. On the other hand, no advance in any art, architecture included, can be expected if the artist goes out in the street and takes a vote on what people want him to do. Cultural progress—and this is particularly true of architecture—involves leadership, not a reflection of present taste-level averages. The answer? I think it is three-fold; first, make sure we understand the true social program, not one of our own theorizing; second, design to it, to the best of our ability, in a manner appropriate to our own esthetic knowledge and our own technology; third, explain, as long and as loud as we can, what we have done and why we have done it, in simple, understandable terms. It is in this third respect that I think we have fallen down.

Vlassov's second point was that we have fallen into the trap of warping our technology to fit a preconceived esthetic instead of doing what we brag about—expressing our technological advance. This one baffled me for a long time. We *have* forced cantilevers because we knew how to build them; we *have* developed the materials and the techniques to build all-glass-appearing walls, because we liked their clean look. On the other hand, it seems to me that many technical steps have been made because of social needs rather than esthetic desires—the lift slab, for instance, or radiant heating, or light-weight steel construction, or prestressed concrete. Then we search for ways to design to use them.

I had about decided the Easterners were wrong on this criticism at the time I gave a talk on the subject, and said so. After the meeting a manufacturer of steel products told me he agreed with me—but he had misunderstood my position completely! "You were so right," he said. "We give the architects what they want. Whatever is the style of the time, we provide material for it. We're very sensitive to the way architects are designing." In his book, technics follow form. So I don't know. I think it's an interesting point, and my only conclusion is that if we are falling into that sequence, let's admit it and study its possibilities.

On the third point (that we have ignored history) I think little need be said. I am sure we recognize the fact that for a time we forgot certain important lessons from the past. Let us hope that as the schools renew an approach to history, it will be in a way that recognizes *historical* developments, social forces, and the development of man; rather than the pure copyism which is always about as unsuccessful as the present phase in the Soviet Union. "Those who love old architecture most, do not imitate it," as Gropius says.

●

One interesting problem remains: why in the name of all that is valid in architecture, are these people doing what they are today? How can it be explained? In an area of the world in which ruthless economic and social changes are made, why do they feel they have to be timid, conservative, even reactionary in architecture and the other arts? (The same thing is happening, of course, in painting, sculpture, music, literature, the dance). The moth-eaten argument about Le Corbusier's "unhappy experiment in Moscow in 1927," as Belluschi puts it, is now a quarter of a century old, and has lost all of its validity. We have some bad modern buildings here too, but we've learned from them, rather than letting them stop us cold.

I have heard many explanations: from their own, that this is a "democratic" approach to planning, based on historical regionalism; through the one that this is a phase of development, similar to our own classic revival periods; to the cynical one that it is a matter of playing down to median levels of taste and understanding in the arts in order to induce national patriotism. I even heard a long story, from a responsible architect, attempting to prove that this was entirely a matter of personal preference and limited cultural appreciation on the part of Stalin. The orders came direct from him, according to this person, who had a friend who had heard the orders given. If this were the case, that pressure on the arts should now be removed. What are the architectural preferences of Molotov, Beria, Malenkov? Will the new succession perhaps mean a change in design approach all over the east of Europe?

Personally, I doubt it very much. I think the reasons, whatever they are, are more deep-seated than that, and to change the trend will require much more than the death of one man. For one thing, education has been along the "new classicism" line for some time now. The old-time modernists who are still there—in Poland, Czechoslovakia, even in the Soviet Union—are older now, and have been practicing in the "new" way for some time. In the meantime, the younger generation that has grown up has been well indoctrinated in an "anticonstructivist" attitude. Education and criticism alone can change things. I was interested to see a large group of students, last summer in Poland, listen and take notes on the critical remarks of the western visitors to the conference I attended. I wondered what questions might have been raised in their minds.

Another interesting thing is happening. Teisen, of Copenhagen, has circularized about a dozen people, from East and West, who were at the meeting, asking them to contribute to a round-robin, round-table discussion of what we saw, to be published in a Danish architectural magazine. It will be interesting to see what discussion comes out of it; if results warrant, we will give you excerpts.

Thomas H. Creighton

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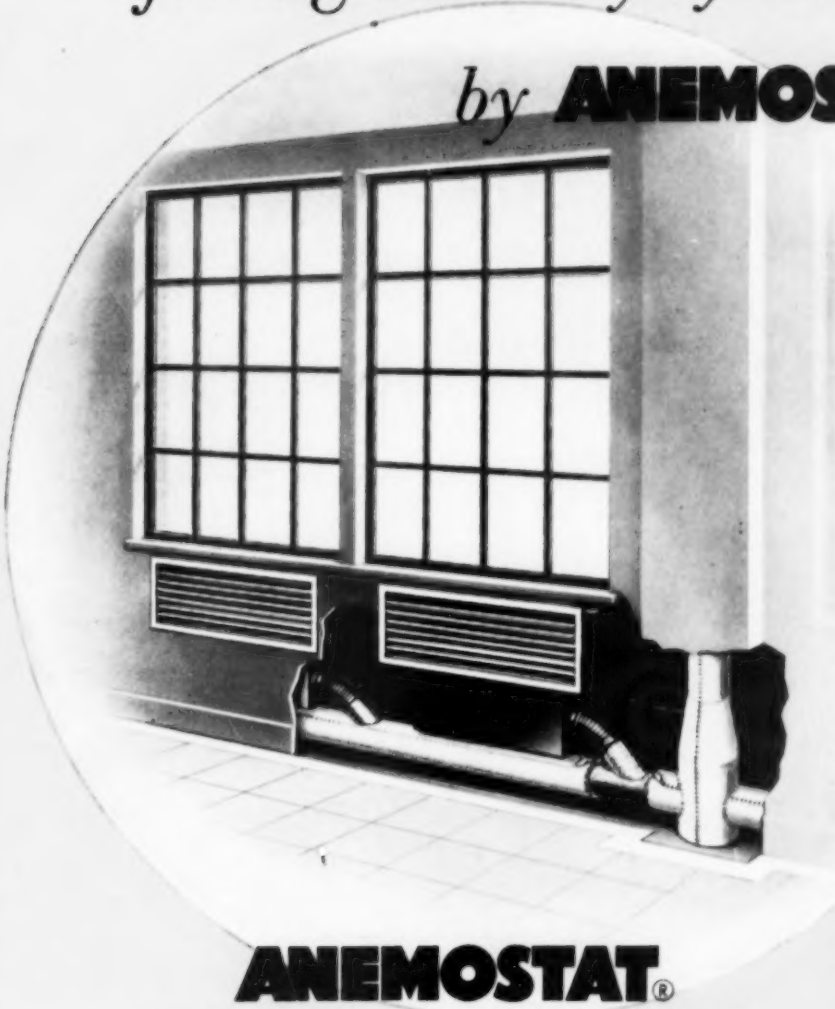

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